

FLIGHT

The
AIRCRAFT ENGINEER
AND AIRSHIPS

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DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list:—

- Sept. 1-4. Week-end Aérien, Starting at Heston.
- Sept. 3. Manchester-Liverpool Inter-City Race.
- Sept. 3. Leicester Chamber of Commerce Day, at Desford.
- Sept. 3-4. Cinque Ports Flying Club Meeting.
- Sept. 4. International Flying Meeting, Lympe.
- Sept. 4. Divine Service at Ratcliffe Aerodrome, 2.30 p.m.
- Sept. 4. Close of British Gliding Assoc. Competition, at Moorside, nr. Barrow-in-Furness.
- Sept. 5. Close of U.S. National Air Races, Cleveland, Ohio.
- Sept. 5. F.A.I. Conference at The Hague.
- Sept. 8. International Meeting, Vicenza, Italy.
- Sept. 10-11. Mr. Stark's "Hangar-Warming," All Hallows-on-Sea, Kent.
- Sept. 17. S. African Air Rally, Rand Aerodrome, Germiston.
- Sept. 17-25. London Gliding Club Camp, Dunstable.
- Sept. 18. Women Engineers' Flying Meeting at Stoneham Park, Southampton.
- Sept. 24. Hillmans' Air Display at Maylands Aerodrome, Brentwood.
- Sept. 24. No. 45 Sqdn. R.A.F. Reunion Dinner, at Overseas League Club House, Park Place, S.W.1.
- Sept. 25. Ladies' At Home at Sywell.
- Sept. 25. Gordon Bennett Balloon Race, Basle.
- Oct. 1. Bristol and Wessex Ae.C. Garden Party.
- Oct. 1-23. Berlin Sporting Flying Exhibition.
- Oct. 6. "Air Navigation." Lecture by Capt. N. Macmillan, before R.Ae.S. and G.A.P.A.N.
- Oct. 8-9. Chatham Air Display.
- Oct. 18. Aero Golfing Society: Cellon Challenge Cup, West Hill G.C.
- Oct. 20. "Flying Conditions on the West Coast of Africa." Lecture by Flt.-Lieut. W. G. Pudney, before R.Ae.S.
- Nov. 3. "Civil Primary Training." Lecture by H. G. Travers, before R.Ae.S.
- Nov. 10. "Aircscrew Design." Lecture by D. L. Hollis-Williams, before R.Ae.S.
- Nov. 18-Dec. 4. Paris Aero Show.

EDITORIAL COMMENT



FROM Cecil Rhodes, with his dream of a Cape-to-Cairo railway, to his friend and executor, Sir Alfred Beit, is but a step, and from Sir Alfred to the Beit Trust is only another rung in the ladder. Through the Beit Trust the spirit of Cecil Rhodes still works for the land which bears his name. The Cape-to-Cairo railway is not yet, and no one now talks about it even as an ideal. The airway has taken its place, not only as an ideal but as an accomplished fact. That, we may feel sure, would be no disappointment to the great African Empire-builder if he were still alive. He was essentially a man of vision. Had aeroplanes come within the limits of practical possibilities during his lifetime, we may feel sure that an African airway would have become his dream of the future. The Beit Trust, in helping the African airway, is surely fulfilling what would have been the dream of Rhodes.

In laying out the airway from Cairo to Capetown, Imperial Airways had to deal with a number of separate Governments. Had the British Empire been as the Roman Empire was, the matter would probably have been more simple. An interview with the Cæsar of the day and perhaps with his Colonial Secretary would probably have settled the whole matter. Imperial Airways had to negotiate with the Governments of Egypt, the Sudan, Kenya, Uganda, Tanganyika, Northern Rhodesia, Southern Rhodesia, and the Union of South Africa. Each was willing to do something to help, but the finances of all were not in exactly the same condition of affluence or the reverse. The ground organisation became the main responsibility of each Government through whose territories the airway ran. In some cases wealthy municipalities were willing to provide first-class aerodromes. More than that was needed. There had to be intermediate landing grounds, and always there was the need for meteorological information and wireless to pass that information along.

In no part of the African route does flying present greater difficulties than in Northern and Southern

Rhodesia. The aerodromes are often situated at great heights above sea level, and the country is largely covered with thick forest. Pilots need the best information of the weather which lies ahead of them, and need to know of an ample supply of landing grounds if they are to set off when in any uncertainty about the storms which may lie ahead of them. This ground organisation has been particularly necessary because the type of machine used is still the "Hercules," which was designed to fly across the Arabian desert, and was not suited to the conditions of Africa. The Governments of the two Rhodesias, however, did not find themselves in a position to make very elaborate organisations in the way of aerodromes, meteorology, and wireless. The result was delays to the mail aeroplanes, which did no good to the cause of flying in general and to the African airway in particular.

The one thing which an airway has to sell is speed. If there are delays, then the passenger, or the correspondent who has sent a letter by the air mail, has made a bad bargain. Spasmodic speed is no use; in fact it may be worse than useless. The speed must be regular, and the services must be no more liable to interruption and delay than are the services by steamer across the seas. In fact the General Post Office has always made it a cardinal principle that slow speed and regularity is preferable to occasional but unreliable high speed. Business is conducted most satisfactorily when the business houses can count on a regular day on which their mails will arrive. Then they know where they are, and can regulate their business accordingly.

Imperial Airways have proved on other routes that they can achieve a high degree of regularity when certain conditions are fulfilled. Among these conditions are an adequate supply of aircraft of a type suited to the work to be done, and equally adequate supplies of meteorological information transmitted by sound wireless equipment. The shortcomings of the ground organisation in the two Rhodesias were damaging the reputation of an enterprise on which the eyes of the world were turned.

Presumably the Finance Ministers of the two Rhodesias could afford to do no more than they had done. Now the Beit Trust has come to the rescue. It was announced months ago that the Trust would be prepared to spend up to £50,000 on improving the ground organisation in the two Rhodesias, and details of the arrangements have now been published. In Northern Rhodesia three new landing grounds will be cleared in the forest, and four others will be made by cutting away the bush on both sides of a road sufficiently to allow a machine to come down on the road. In Southern Rhodesia four new landing grounds are to be made, nine existing ones will be

improved, and three road strips will be prepared. These improvements will mean that in Northern Rhodesia there will be landing grounds every 50 miles, and in Southern Rhodesia every 25 to 30 miles. At Broken Hill aerodrome in particular quite extensive improvements will be taken in hand. There will be directional wireless between Broken Hill and Salisbury, and a medium-wave wireless transmitting set is to be installed at Salisbury. These things should do much to help on the regularity of the service over this difficult part of the route. The advent of the "Atalanta" type of aeroplane should remove the difficulties caused by the shortcomings of the old "Hercules" type, and then the African airway should approach a state of efficiency such as ought to obtain in such a great British Empire enterprise. Before long, too, we hope to see the Boulton & Paul mailplane put to work along this airway to demonstrate real speed in the carriage of mails up and down the length of Africa.



Though Mr. H. G. Watkins was not himself the pilot of the expedition, his tragic death in Greenland is still a loss to the cause of air transport. He was for the second year leading the British Arctic Air

**H. G.
Watkins**

Route Expedition, which was collecting data about flying conditions in Greenland in order to see if it would be possible to establish a regular air service between Europe and America by way of Iceland, Greenland and Labrador. The pilot taken by the expedition the first year was Flt. Lt. D'Aeth, and this year Flt. Lt. Cozens. The work was of great potential importance, as, if the route over the Greenland ice-cap proves negotiable, a way may be found for getting air mails to Canada without having to face the long sea crossing of the Atlantic which entails such great risks and obliges such a heavy load of fuel to be carried that pay load is reduced to a very uneconomic figure. The conditions in Greenland could not be studied except by sending a well-equipped expedition to that land to make a prolonged stay there. The success of such an expedition always depends chiefly on the leadership, and in Mr. Watkins, young though he was, an ideal leader was found.

Mystery surrounds the circumstances of his death, though various theories have been put forward. The loss of so gifted and so young a leader is a tragedy which has caused grief to the whole nation and to the whole body of explorers. The work so well begun by Mr. Watkins may be carried on, but it will be hard to replace the leader who has been lost. Whether the result will be a new air route between Europe and America still remains to be seen.



Changes in the Higher R.A.F. Commands

THE Air Ministry announces the following appointments:—

Air Vice-Marshal Edgar Rainey Ludlow-Hewitt, C.B., C.M.G., D.S.O., M.C., to be Director of Operations and Intelligence, Air Ministry, and Deputy Chief of the Air Staff, on or about December 1, 1932, vice Air Vice-Marshal Charles Stuart Burnett, C.B., C.B.E., D.S.O.

Air Vice-Marshal Charles Stuart Burnett, C.B., C.B.E., D.S.O., to be Air Officer Commanding Iraq Command, about December 1, 1932, vice Air Vice-Marshal Edgar Rainey Ludlow-Hewitt, C.B., C.M.G., D.S.O., M.C.

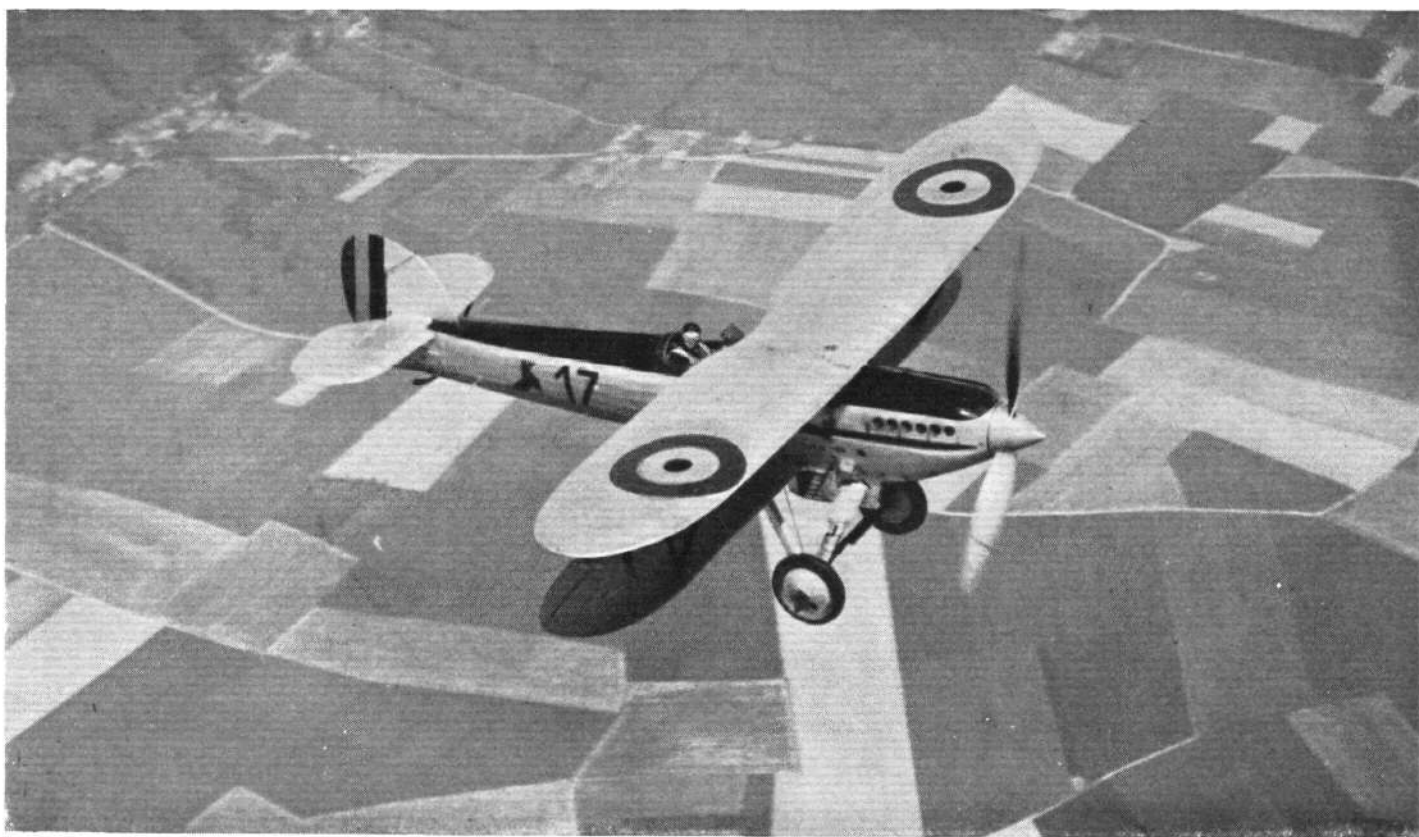
Air Commodore Charles Dempster Breese, A.F.C., to be

Senior Air Staff Officer, Fighting Area, with effect from November 15, 1932.

Summaries of the careers of these three officers will be found on page 835.

Prince of Wales Flies to Biarritz

THE Prince of Wales and Prince George ended their holiday at Cannes at midday on August 24, when they left on two "Puss Moths." They called at Marseilles shortly after 2 p.m., and took off again for Toulouse. They landed at Biarritz at 7 p.m. At the Princes' request there was no formal reception at the aerodrome, where one or two French officials and some English friends were present to greet them.



Maj. le Baron de Woelmont, Chief of the Staff to Gen. Gillieaux, in his Fairey "Firefly" (Rolls-Royce "Kestrel"). (FLIGHT Photo.)

Fairey Aircraft in Belgium

Squadrons of "Fireflies" and "Foxes"

BELGIUM'S military Flying Corps is the most formidable air weapon possessed by any of the smaller nations of the world. A separate Air Force has not yet been introduced, as in Great Britain and Italy. The Flying Corps is still an arm of the Army, as is the case in France and the United States. So far as Belgian territory in Europe is concerned, there seems no reason why things should be otherwise. The Royal Air Force of Great Britain originally came into existence to obviate the competition between the War Office and the Admiralty in obtaining supplies of aircraft for their own flying services during the war. Such a situation will not arise in Belgium. An island kingdom like Great Britain has to envisage the possibility of an air campaign in which her Army as such cannot take part, and therefore a new reason has arisen for the Air Defence of the country to be undertaken by a separate force under a separate Ministry. The responsibility of Great Britain for the defence of a great number of overseas lands and possessions provides a further reason for the existence of a separate Air Force under the British Crown. Belgium in Europe has to consider attacks by land, and of these she has had all too great an experience. Any aircraft which may attack her will be aircraft attached to an invading army, and the aircraft which she uses for her own defence will be acting as army aircraft. For her there is not likely to be any need for a separate strategy of the air; all her tactics in the



Lt. Gen. Gillieaux, A.D.C. to the King of the Belgians, Commandant l'Aeronautique Militaire Belge. (FLIGHT Photo.)

air will be correlated to the tactics of her ground army.

Military flying in Belgium dates from May, 1911, when a flying school was opened at Barsschaet, and a company of aviators was formed under the command of Cmdt. du Génie Mathieu. The equipment consisted of one Farman biplane, one two-seater "Aviator" offered to the King by Baron de Caters, one Bessoneau hangar, and one motor-car. Flights began on May 5, 1911. Next year an elementary flying school was started at St. Job, in Goor-lez-Anvers, by the Jero Company, which built "Farmans" under licence. On the outbreak of war the Flying Corps consisted of 26 Army pilots, 10 officers with civil flying certificates, and 23 officers under instruction. The 26 pilots were organised in four escadrilles with "Farmans" driven by the 80-h.p. "Gnome." Two were stationed at Anvers, commanded respectively by Capt. Deschamps (afterwards killed in action) and Capt. (now General) Wahis, who lost an arm in the war; one was at Liège under Lt. Demanet (killed in action) and the fourth at Namur under Lt. Soumoy (killed in action). Throughout the war the Belgian Flying Corps fought bravely in the air, though constantly hampered by lack of equipment. The photographic machines under Cmdt. Jaumotte did excellent work, and the same may be said of the fighter machines under Cmdt. Jacquet. Prominent among the fighting pilots was Capt. Chevalier Willy Coppens, now Air Attaché at Paris, who destroyed 36 German balloons, and the names of

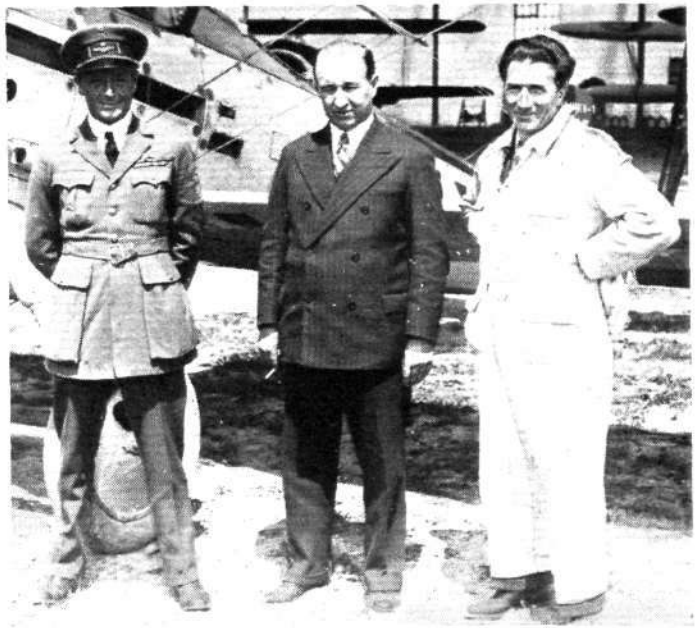


AN ESCADRILLE FROM NIVELLES : Good formation flying by a Belgian squadron in "Fireflies." (FLIGHT Photo).

the pilots Thieffry, de Meulemeester, Jacquet, Olieslagers, Kervyn de Lettenhove, and Robin will always be remembered with honour.

Belgium does not yet possess a fully developed aircraft industry. Her flying corps has always been equipped with machines of foreign design. For many years the rule existed that only such types should be acquired as had been adopted and tried out in the flying corps or air force of the country of their origin. One effect of this rule was that the Belgian Flying Corps was usually equipped with machines of a type which was anything but new. Aircraft design progresses at a great pace nowadays, and even in our own small Royal Air Force we constantly find that a type which has been adopted as standard has become antiquated before it has been supplied to all the units for which it was destined. The position was bound to be worse when foreign aircraft were bought.

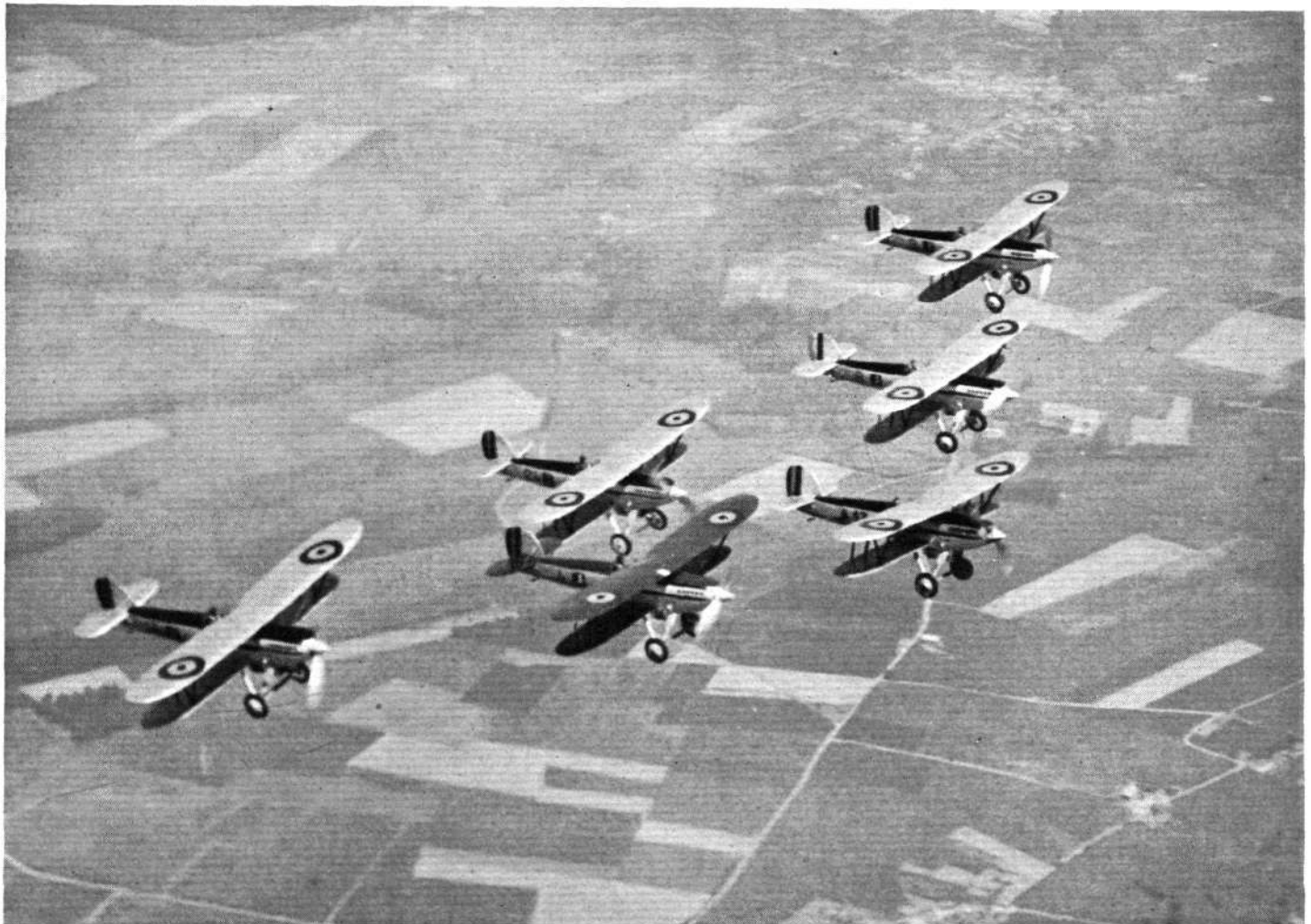
In Belgium the position at the beginning of 1931 was that the Flying Corps possessed about a dozen D.H.9 machines, which were used as training machines, and which had been in service for the past 12 years. The squadrons of single-seater fighters were flying either the Czecho-Slovakian "Avia" or the French "Nieuport." The two-seater squadrons were using the French "Breguet XIX." About that time an officer of ability and initiative was placed in command of the Flying Corps, General Gillieaux. He had been for years in the artillery, and was aged 57. Nevertheless, he set to work to learn to fly, and he succeeded. Now he regularly flies about in his Avro 504. It is strange to remember that during the war it was thought that a man would be too old for piloting at 30. Gen. Gillieaux set to work to increase the efficiency of his new corps. Belgium can produce fine pilots, but without really good up-to-date designs of aircraft she could not have a Flying Corps worthy of the reputation which she won in the war, or one to which she could look with confidence to give due assistance to her Army in case she should ever again have to play the rôle of "Cockpit of Europe." It was accordingly decided to bring the corps up to date by providing the squadrons with modern aircraft of high performance.



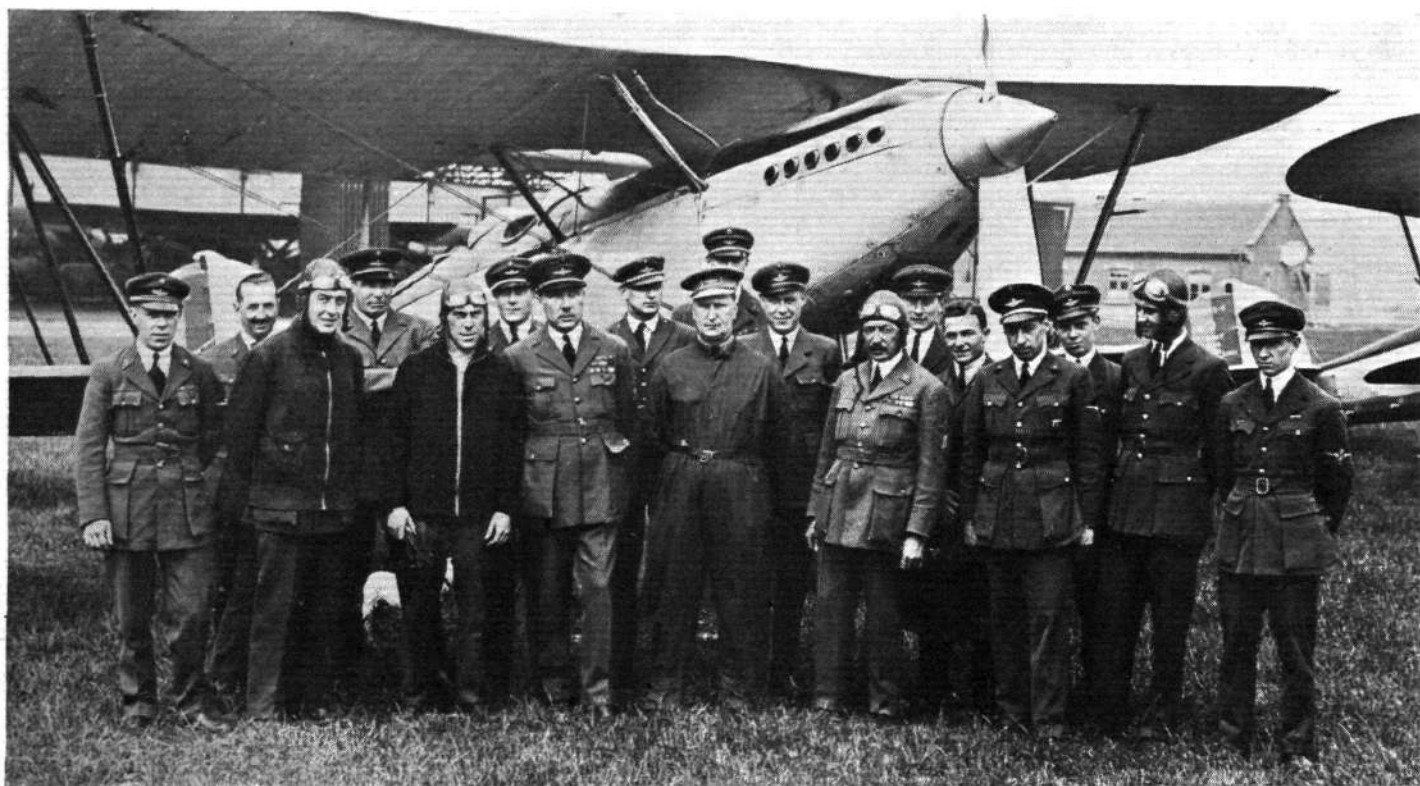
MEN OF MARK : Left to right, Maj. le Baron de Woelmont, Mr. Tips (Fairey representative in Belgium), and Reserve Lt. E. Tollet (test pilot for Fairey machines in Belgium) at the works at Gosselies. (FLIGHT Photo.)

In 1931 a competition was held to decide on new designs of single-seaters and two-seaters for re-equipment of the corps. At first no British machines were entered, and it seemed that the choice was about equally divided between metal "Avians" with "Jupiter" engines and "Dewoitines" with the 500-h.p. Hispano-Suiza.

At this juncture, the Fairey Aviation Co., Ltd., of Hayes, sent a "Firefly" with Rolls-Royce "Kestrel"



THE BROAD ARROW : Six "Fireflies" of a Belgian squadron from Nivelles. (FLIGHT Photo.)



PILOTS OF THE 5th GROUP, 1st REGIMENT D'AERONAUTIQUE, AT EVERE : Front Row (left to right), Adjudant De Groote, Capitaine Breulhez, Capitaine G. Verhaegen, Capitaine Vander Linden, Lieutenant Colonel Iserentant (Cdt. le Regiment), Major Hansenne (Commandant le Ve. Groupe), Adjudant Hoton, 1er Sergent Mouzon, 1er Sergent Baudoux. Back Row (left to right), Adjudant Crooy, Sous-Lieutenant Lenoir, Adjudant Forest, Adjudant Beerens, Adjudant Rombauts, Sergent de Vinck de Winnezele, 1er Sergent Persenaire, 1er Sergent Dieu, Caporal Closset. (FLIGHT Photo.)

engine over to Belgium and began to give demonstrations. It was done purely as a speculation, for the Belgian Government had held out no hopes of adopting a British type or placing a contract. Nevertheless, the performance of the "Firefly" could not but attract attention, even as its appearance aroused admiration—for the "Firefly" is undoubtedly one of the most beautiful little aeroplanes which it has ever been our pleasure to watch. Its general performance and the construction of the machine made so deep an impression that finally the authorities decided to drop all thoughts of other machines and to order the "Firefly" at all costs. This breach with precedent was at first somewhat surprising to the Press of the country, and the decision was criticised on those grounds. Still, there was no denying that the "Firefly" was a new design, and its performance outstripped the performance of all its possible competitors. There was no doubt what the pilots of the Belgian fighter squadrons wanted; and so the matter was settled.

Then a metal "Fox" with "Kestrel" engine was

also sent over for demonstration. It was a Mark II "Fox," all metal, and practically a new type. This point needs to be made clear, for, of course, the composite wood and metal "Fox" with "Felix" engine was anything but new, and had been used for some years past by No. 12 (Bomber) Squadron of the Royal Air Force. The Belgian Press might have had some justification if it had protested against the adoption of the Mark I, but the Mark II was an entirely different proposition. It may also be remembered that the Mark I "Fox" had made a great name for itself and for No. 12 B.S. Its speed had put to shame the fighter machines of that day, and during the Air Exercises of 1927 had caused many anxious moments to Air Vice-Marshal Sir Robert Brooke-Popham, who then commanded the Fighting Area. The present writer can remember seeing his face light up with satisfaction when he heard that some of his fighters had actually succeeded in making an attack on No. 12 B.S. during a raid. The fighters of those days had nothing like the performance of the "Firefly." The Belgian Flying Corps decided to



FAIREY "FOXES" AT EVERE AERODROME : In the Belgian Army the "Fox" is used as a reconnaissance aeroplane. (FLIGHT Photo.)



"FIREFLY" PILOTS AT NIVELLES: Standing (left to right), Sergeant Pieret, Ier Sergeant Doppagne, Adjudant Sauveniere, Capitaine Duthoit, Major Baron de Woelmont, Capitaine Norbert Leboutte, Caporal Richard, Ier Sergeant Tahon, Ier Sergeant Vincent. Sitting (left to right), Adjudant De Coninck, Ier Sergeant Dubois, Sergeant Genin, Sergeant Vandelanotte, Sergeant Desmyttere. (FLIGHT Photo.)

adopt the "Fox" Mark II as its standard two-seater. The two-seater squadrons in Belgium are not called "bombers," but reconnaissance squadrons. Presumably that means that they are specially trained for army co-operation work. The functions of army co-operation squadrons are innumerable, and it is now our own view, as well as that of the Belgian authorities, that those squadrons need aeroplanes of high performance. The Belgians secured that quality when they decided to adopt the "Fox."

The first order placed was for 45 "Fireflies" and 12 "Foxes." It was stipulated that as soon as possible the Fairey Company should set up works in Belgium and manufacture the machines there, using Belgian labour so far as could be arranged. Before the works could be got ready, machines might be delivered from Hayes. Actually the first 12 "Foxes" and the first 25 "Fireflies" were made at Hayes.

Meantime, Mr. Tips, of the Fairey Company, had been busy in Belgium. He acquired an aerodrome and works at Gosselies, near Charleroi, and built on about another 50 per cent. to the works. This was commenced about the end of April, 1931. Local labour had to be engaged,

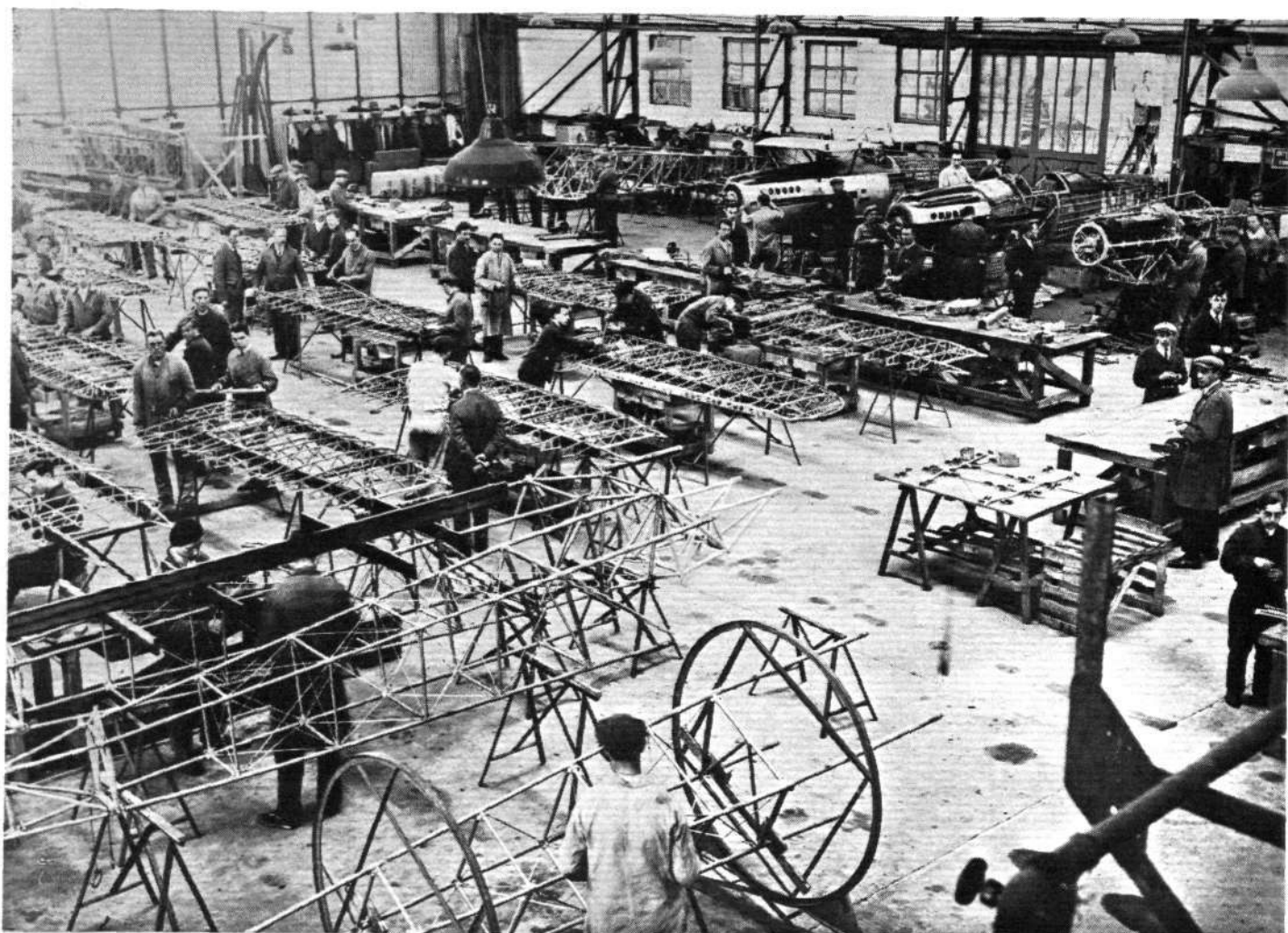
and, which was more difficult, trained. Still, despite all difficulties, in 12 months the shed had been built, and 20 new machines, together with a number of spares, had been delivered. Since the first order, an additional order for 30 "Fireflies" and 31 "Foxes" has been received. The works at Gosselies are now starting delivery of a new batch of 30 "Fireflies," which are more than 50 per cent. finished.

Two squadrons of "Foxes," Nos. 9 and 11, are stationed at Evère aerodrome, near Brussels, while four squadrons have been now supplied with "Fireflies," two at Nivelles and two at Schaffen, near Diest. More squadrons will be supplied with one or other of these types until the whole of the fighter and reconnaissance squadrons of the Flying Corps have been re-equipped with Fairey machines.

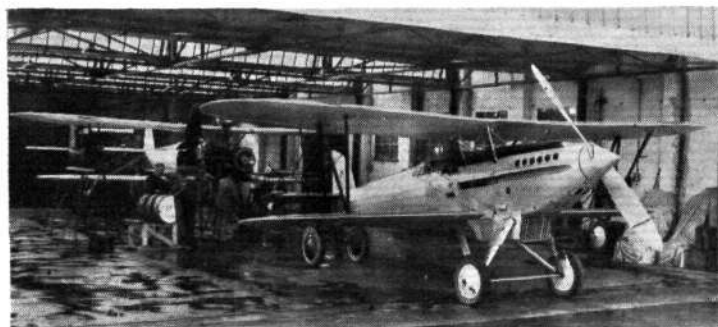
The organisation of the units which use Fairey aircraft is as follows:—At Schaffen is stationed the 1st Group 2 Aé. commanded by Capt. Van Aubel, which comprises two fighter squadrons flying "Fireflies," namely, the 1st Escadrille commanded by Capt. R. Vanderstichelen, and the 3rd Escadrille commanded by Capt. Joos. At Nivelles is stationed the 2nd Group 2 Aé. under Capt. L. Leboutte, which comprises two more "Firefly" squadrons, the 5th



"FIREFLIES" AT NIVELLES: Other squadrons equipped with the same type are stationed at Schaffen. (FLIGHT Photo.)



GETTING THE WORK DONE : The Fairey works at Gosselies, near Charleroi, Belgium ; two views of the interior.
(FLIGHT Photos.)



MEN, WOMEN, AND THE MACHINE : The picture on the left shows "Fireflies" receiving finishing touches in the erecting shop at the Fairey works at Gosselies. On the right is a group of the staff at Gosselies. (FLIGHT Photos.)

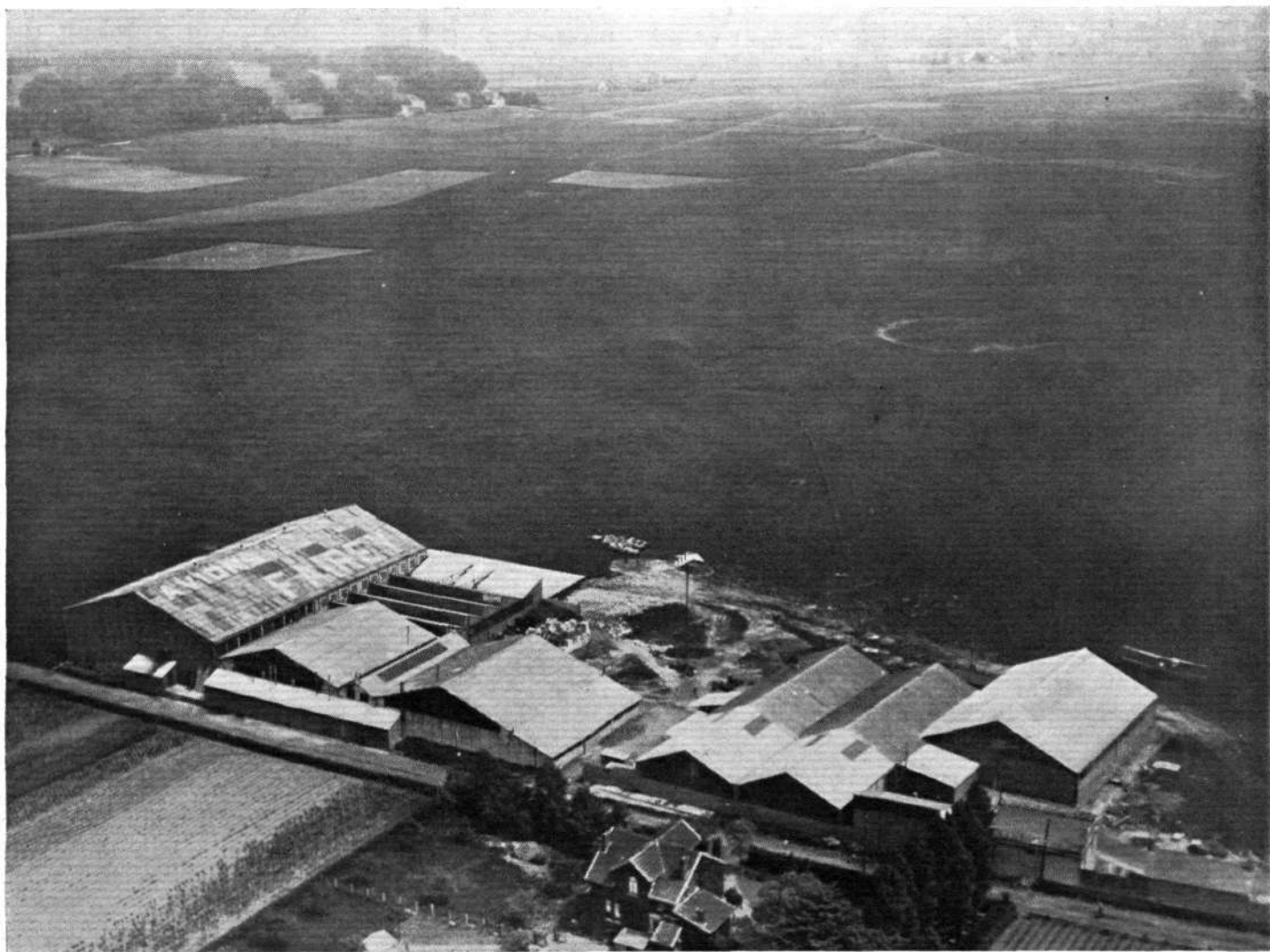
Escadrille under Capt. N. Leboutte, and the 7th Escadrille under Capt. N. Duthoit. Evère is the station for reconnaissance squadrons which have been equipped with "Foxes." It is the station of the 5th Group I Aé. commanded by Maj. Hansenne, and this group is composed of the 9th Escadrille under Capt. Vanden Linden, and the 11th Escadrille under Capt. Kervyn de Lettenhove.

The corps is delighted with its choice, more particularly as the performance of the Fairey machines has exceeded the guaranteed performance by about 20 km./hr. It seems to be an accepted fact on the Continent that the aeroplanes built there should just realise their estimated performance by the skin of their teeth. That the "Firefly" should have exceeded her guaranteed performance seemed in the nature of a miracle—and this despite the fact that in the model supplied to the Belgian squadrons the petrol tankage had been increased, jettison valves had been added, a complex system of fire-extinguishing appara-

tus installed, and provision been made for radio telephony. In the latest series brake gear is also being added.

The Belgian pilots have taken very kindly to the "Firefly," although their corps possesses no dual-control training type which makes a good introduction to flying such fast fighters. In fact, the Belgians make very good pilots and fly their new machines well. Our illustrations give some idea of the good formation flying by the Nivelles pilots, but it is only fair to mention that these photographs had to be taken from an ancient "Centaur" aeroplane with a top speed of 90 km./hr., which naturally could not keep station beside the "Firefly" squadron, and did not allow our photographer to delay "pressing the button" until the most favourable moment. He was obliged to snap whenever the squadron came within range. Regulations forbade a foreign photographer to be taken up in a Service "Fox."

F. A. DE V. R.



GOSSELIES FROM THE AIR : A view of the Fairey works in Belgium which are turning out "Foxes" and "Fireflies" at a great pace for the Belgian Flying Corps. (FLIGHT Photo.)

Private Flying & Gliding

THE FOLKESTONE TROPHY RACE

The race for the Folkestone Aero Trophy held at Lympne on the 25th was a great success and a triumph for Comper aircraft. There were 20 entrants, and it was decided to run two heats, the first five machines in each qualifying for the final. The finishing line of the race was between the Pleasure Pier Head and a marked boat or buoy, and after crossing the line all competitors returned to Lympne, where the great victory of the Compers was duly celebrated. Mr. Brie (Autogiro) alarmed everyone by not returning for some little time after all the other competitors in his heat had been duly counted in, but he got back just in time to see Mr. Styran wait for the red flag of the starter, and proceeded to "hover" until the Gipsy III Comper took off some five minutes later! Mr. Brie told us that when he realised the £50 was definitely out of his reach, he decided to do the company £50 worth of good among the public along the beach by demonstrating his hovering powers.

The strong wind played its part in the race, and it was certainly the Compers' day out; the faster and smaller the machine, the less it seemed affected by a wind which served to bring the average speed of the "Moths" down to 92 for the fastest and 85 for the slowest. In addition, the bumps had to be experienced to be believed, and several people reported losing complete control on more than one occasion.

The course was a well-planned one in respect of the turning points, all of which could clearly be seen throughout the race, so that the local entrants could claim little advantage over the strangers.

Sir Philip Sassoon, who was President of the Air Race Committee, had entered his "Puss Moth," and showed his interest in the proceedings by flying in it himself, piloted by Mr. Parkes, which was a source of very considerable gratification in the neighbourhood. Only one competitor failed to face the starter, Miss Leathart being delayed at Heston by a leaking petrol tank until it was too late for her to hope to get down in time for even the second heat. Among the interested spectators were many well-known local people, Capt. Duncan Davies coming down to Lympne especially to see the race.

The handicapping was in the efficient hands of Capt. Dancy, while Capt. Lamplugh was present on behalf of the Royal Aero Club, and Mr. Jeffs of the Air Ministry was also present in person.

A cold lunch was served at a long table, and so well

patronised was this item that it almost seemed as if supplies were going to run out, but the emergency was suitably provided against.

Altogether things went with a swing, and everyone spent a thoroughly enjoyable day. The Folkestone Aero Trophy Race looks like becoming a well-supported annual event.

THE FINAL OF THE FOLKESTONE TROPHY RACE.

Aircraft and Engine.	Pilot.	Start.			Finish.			Average Speed.	Final Place.
		h.	m.	s.	h.	m.	s.		
Moth (Gipsy I)	Walwin	3	00	38	3	27	00	89	9
Moth (Gipsy I)	Lipton	3	00	45	3	26	28	91	5
Moth (Gipsy I)	Brown	3	00	59	3	27	09	89½	10
Moth (Gipsy I)	Miss Sale-Barker ..	3	01	27	3	26	53	92	8
Widgeon (Hermes II) ..	Law	3	02	31	3	26	42	96½	7
Monocoupe (Scarab) ..	Cotton	3	04	43	3	25	53	110½	3
Swift (Pobjoy "R") ..	Miss Crossley ..	3	04	43	3	26	09	109	4
Swift (Pobjoy "R") ..	Comper	3	04	53	3	25	35	113	2
Puss Moth (Gipsy III) ..	Parkes	3	05	40	3	26	35	111½	6
Swift (Gipsy III)	Styran	3	08	41	3	25	18	141	1

GALWAY HARBOUR AIRPORT

Further consideration has been given to the proposals of Iona National Airways to establish an air service from Galway to London and Continental centres by members of the Galway Harbour Board. At a recent meeting a convenient site at Renmore, about half a mile from Galway, was suggested by one of the members, and it was agreed that the Board's engineer should be asked to report immediately on its suitability as an aerodrome.

Following the tour of Ireland in a "Puss Moth" of Shell-B.P., Ltd., however, Capt. Harpur, managing director Shell-B.P. (I.F.S.), Ltd., and Col. C. F. Russell, one-time Chief of the Free State Air Corps, have visited Holland on the invitation of the directors of K.L.M. to consider the possibility of linking Ireland with the Holland-England service, and it is understood that there is every possibility of the Dutch company associating themselves with an effort to develop commercial aviation in the Free State. Some time ago it was reported that Iona National Airways were in conversation with K.L.M. on the same subject, but no further statement has been made by either company. Col. Russell endeavoured to interest the Irish Free State Government in an Ireland-England service several years ago, but he was given no support. If the present scheme receives any governmental support an airport will probably be established at Collins-town, a disused military aerodrome near Dublin, and extensions of the service made to Galway and Cork.

MAIDSTONE AERO CLUB

On Sunday, August 28, Maidstone was particularly



Ready for the start of Folkestone Aero Trophy Race. The nearest machine is Mr. MacGilchrist's "Swift" (Gipsy III), on which Mr. Styran won the race.

active—visitors arrived by air from Brooklands, the *Stage and Screen* from Hatfield and the London Aeroplane Club; the *Stage and Screen* walked away with the chief prizes of the day. During the afternoon some 600 people attended from Maidstone district for a "Clay Pigeon Shoot," and the several Aero Club representatives put up a very good show against the local shots. Maidstone Aero Club has some attraction every week-end, and a series of landing competitions is about to be started. Those desiring to join the Club should do so now, as an entrance fee of £5 5s. is being imposed in the New Year and applicants joining now receive the benefit of the half-year's subscription of £1 11s. 6d.

Air Vice Marshal Boughton came down by air and is proposing to make Maidstone his headquarters.

The Club are also erecting a number of lock-ups, and the first three are already booked, price per month is £2 10s.; those desiring to book for the next and last batch should make an early application. Maidstone Airport is only 29 miles from London and the Maidstone district bus passes the premises—in addition there are service cars available which will fetch and carry on receipt of a telephone message.

GRAVESEND AIRPORT RALLY

On Thursday, August 25, a preliminary rally was held by "Gravesend Aviation, Ltd.," at their new aerodrome, "Thong Road, Chalk." Mr. T. A. B. Ternan and Mr. W. A. C. Kingham, directors of the company, received the guests, flying and otherwise.

First to arrive was Capt. Muir in a "Desoutter Gipsy," owned by "Rollason, Muir & Rickard," from Croydon, with a passenger, followed immediately by the Gravesend Co.'s "Desoutter," G-AAPU, flown by the Co.'s chief instructor, Mr. A. D. Carrol.

A formation of six machines then arrived, flown from Brooklands under the leadership of Capt. G. Lowdell, who also put up a fine show of aerobatics, greatly appreciated by everybody.

Numerous other machines began to darken the sky, the first bunch including the new "Monospar" twin-Pobjoy-engined cabin monoplane flown by Flt. Lt. H. M. Schofield, from Croydon, with Mr. H. J. Stieger as passenger, and the latest "D.H. Fox Moth" ("Gipsy III"), flown by Mr. J. Buckingham from Stag Lane Aerodrome, with Mrs. W. A. C. Kingham and Miss N. Ternan as passengers.

The "Redwing Aircraft Co.'s" contingent appeared in formation, from Gatwick, and three of them, led by Flt. Lt. N. M. S. Russell, gave a brilliant show of formation flying, finishing with the Prince of Wales' feathers, which called for an encore later in the day.

N.F.S., Hanworth, paid the company a visit with three machines, one machine piloted by a Chinese pupil.

A further formation of machines, flown by "Rollason, Muir & Rickard" pupils, arrived from Croydon, led by Mr. Rickard, with Mr. G. Watson shepherding them up at the rear.

Mr. Diamant (Dominion Motor Spirit Co.) then landed



Mr. A. J. Styran (left) looks cheerful after his victory as does Flt. Lt. N. Comper, who, besides coming in second on a "Swift" (Pobjoy), is designer also of both machines.



in his "Puss Moth," coming all the way from the Isle of Wight to join the rally, followed by Capt. R. Bentley (Shell-Mex & B.P. Co.) and Mr. B. J. Hanstock (Anglo-American Oil Co.), also in "Puss Moths."

The Town Councillors, local landowners and their friends enjoyed themselves getting acquainted with the visiting pilots.

Press representatives and the Paramount News Film Co. were busy throughout the morning photographing the machines, particularly the "Monospar," "Fox Moth" and the "Redwings."

"Rollason, Muir & Rickard" machines catered for joy-riding all the afternoon and evening.

THE B.G.A. MEETING AT MOORSIDE

The British Gliding Association meeting at Moorside, in the Furness district of Lancashire, opened on August 27 in brilliant weather, with an ideal wind from the south-west. In the afternoon half a dozen sailplanes went up. They at various times made for the Duddon Estuary, sailing in the direction of Broughton. The officials are of opinion that Moorside is quite as good a site as the famous Wasserkuppe ground in Germany. If the fine weather and breeze continues there should be some excellent contests next week.

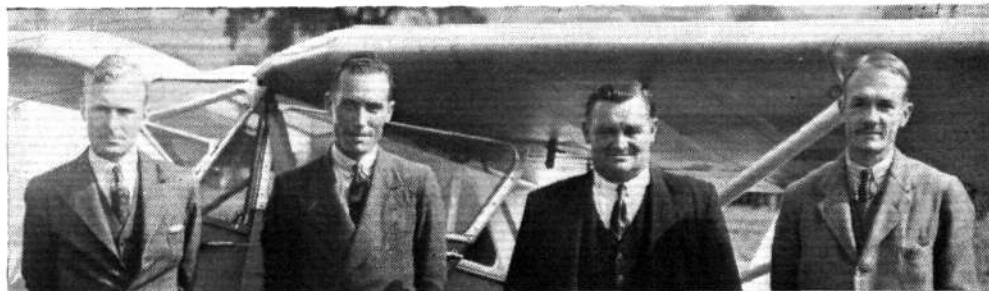
ESSEX AVIATION DISPLAY

With the object of providing Essex with an airport such as Middlesex, Surrey and Kent already possess, Mr. E. Hillman is allotting his aerodrome at Maylands, near Romford, for the Essex Aviation Display, which will be held on Saturday, September 24.

The Lord Mayor and Lady Mayoress of London (Alderman Sir Maurice Jenks and Lady Jenks) and the Sheriffs will attend. They will fly in semi-state from Heston Airport at noon to Mr. Hillman's aerodrome, and will attend a luncheon at Romford before opening the Display.

All the Mayors of Essex, the Members of Parliament, the County Council, and the Urban and District Councils will be represented, and most of them have given the Display their patronage.

Among the items will be an aviation lesson by wireless from an Autogiro and a "march of the air pioneers." All those who have taken parts in flights as pilots to India, the Cape, Australia, or the Atlantic will be invited to "fly



Mr. Hillman with his staff at Maylands Aerodrome: Left to right, T. W. Morton, H. Wood, E. H. Hillman, R. D. Crundall

(FLIGHT Photo.)

past" the Lord Mayor, and in the order of their historic flights. Their exploits will be explained to the public by loud speakers.

Mr. Hillman has provided the cash for prizes for an air race from Romford to Clacton and back. This will then be of an annual nature.

The Lady Mayoress will present the prizes before the civic party motors back to the Mansion house.

A 30 min. firework display at dusk—about 8 p.m.—will conclude with a set piece showing aircraft bombing battleships.

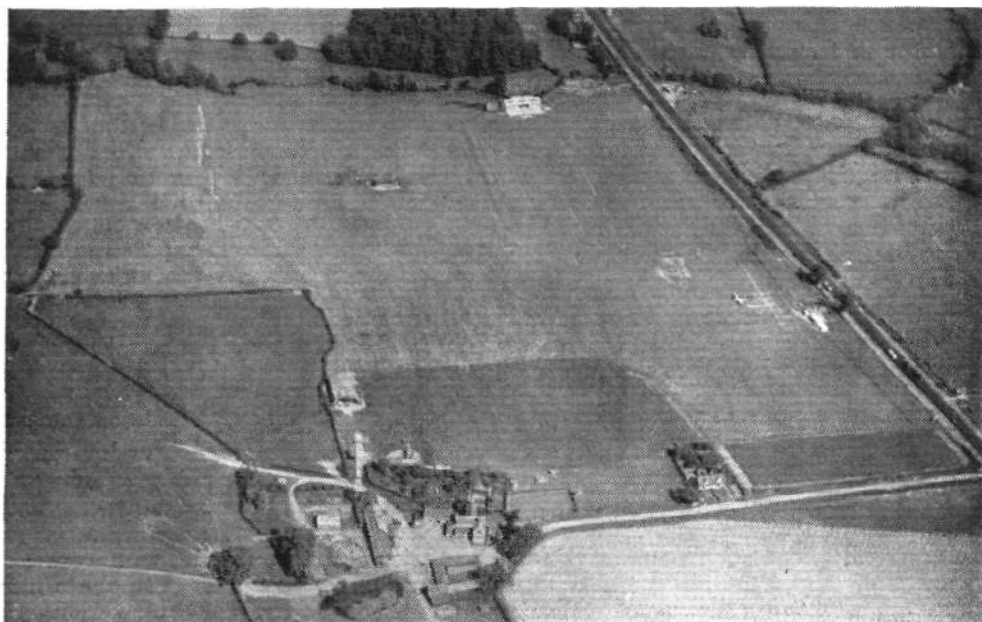
Private owners will be particularly welcomed and entertained to lunch and tea. They are asked to notify Mr. Courtenay of their intention to be present, and to send data of their machines for inclusion in the programmes.

Pilots who wish to enter the race are also asked to get into touch with Mr. Courtenay, at 8, New Court, Lincoln's Inn, London, W.C.2 (Holborn 1820).

BROOKLANDS

Nearly 80 hr. flying were done at Brooklands last week. Several new pupils have joined, including Mr. Bartlett, a private owner who is having dual on his own machine. Mr. Woods has done his height tests, and Sir Robert Clayton has completed the night-flying tests necessary for his "B" licence. Mr. Benjamin has done his first solo, Mr. Trowbridge Heaton has commenced a course of blind flying, and Mr. Gadgil, one of the School's Indian pupils, has been taking an instructor's course, which he has now satisfactorily completed. Mr. Mistingier, a pupil who hails from Vienna, took up a "Puss Moth" solo during the week without any previous dual instruction on the type. In spite of the fact that his experience was limited to a few hours' solo on the School's "Gipsy Moths," he handled his new mount excellently. The Press Aero Club has been very active. Mr. Iams is now having instruction, while

Maylands Aerodrome, Romford, from whence Mr. Hillman is running a daily service to Clacton. (FLIGHT Photo.)



Mr. Murphy has completed his height tests. The School's new arrangements for dual instruction on the Cierva Autogiro are proving very popular, and the number of inquiries which have been received proves that there is a great demand for lessons on this type of machine. The new circuit indicator on Vickers' sheds has now been brought into use. This consists of a neon sign in the shape of the letter "R," and as it has been placed in a very prominent position on the hangar roofs can be seen for a considerable distance. When this flashes, right-hand circuits will be in force; when "left-handers" are the rule it will not be illuminated. The members of the Society of Model Aeronautical Engineers are to visit the aerodrome next month and hold a meeting, at which they will demonstrate their various-powered flying models.

MESSENGER BOY'S LICENCE TO FLY AUTOGIRO

Frederick John Cable, a London messenger boy, aged 17, has just been licensed to fly an autogiro. He is employed by the Commercial Cable Co., and is a member of Co.'s Messenger Boys' Flying Club. Cable has never flown in an ordinary type of aeroplane; earlier this month he flew alone at Hanworth in an autogiro after only seven and a-half hours' instruction in a dual control machine.

THROUGH ROSE-TINTED SPECTACLES

Infra-Red Rays and Aerial Photography

DURING the last few weeks large numbers of photographs have appeared in the press, some of them stated to have been "taken in the dark." In point of fact, they were taken by lights which were invisible to the human eye, but to which the special plates produced by Messrs. Ilford, Ltd., of Ilford, Essex, were sensitive. These plates are extremely sensitive to infra-red rays, which cannot be seen by the eye because the wavelength is so long as to be outside the range of the visual spectrum. Photographs on the new plates are taken through infra-red filters in the lens of the camera, and on page 825 will be found a reproduction of two photographs, believed to be the first to be taken by infra-red rays of and from an aeroplane.

These two photographs reveal several interesting features. First and foremost, the amazing haze-penetrating properties of these plates when used in conjunction with an infra-red filter are well brought out in the aerial view of Brooklands aerodrome. This photograph was taken on a day when there was a good deal of haze about, and yet it will be seen that the cloud shadows and details on the ground are visible right up to the horizon. This effect is rarely, if ever, obtained in this country by ordinary photography, even when using panchromatic plates and filters.

Grass and foliage generally appear to reflect a great deal of infra-red light. Hence the illusion that the photograph

was taken when Brooklands was covered with snow. It is conceivable that this fact may be found useful in detecting camouflage, as it is extremely doubtful that any green paint or dye would reflect the same amount of infra-red light as the natural greens which surround the object which was intended to be camouflaged.

In the other photograph a Hawker "Hart" of No. 33 Squadron is seen flying above the clouds. The blank blue sky reflects no infra-red, and is, therefore, reproduced very dark, while the red of the tricolour on the rudder reflects much and is nearly as white as the white band.

Although these new Ilford plates are much more sensitive to infra-red rays than any which have been produced before, they are, as compared with ordinary plates, very slow, and their full value for aerial work will not be apparent until the chemists at Ilford succeed in increasing the speed considerably.

While on the subject of infra-red rays and their fog-piercing qualities, it is interesting to speculate on the possibility of rendering the rays visible to the human eye in some way comparable with that in which the fluorescent screen makes the X-rays visible. Imagine the joy of an air-line pilot in this country, or on some future North Atlantic service, if he could see through all the murk as if the sun were shining on a clear day. No more "blind flying"! An extravagant thought, perhaps, but by no means impossible. J. Y.



NOT A NIGHT RAIDER : The upper photograph shows a "Hart" of No. 33 Squadron flying above the clouds, while the lower is a view of Brooklands as it might look after a heavy fall of snow. The pictures were taken by infra-red light. (See p. 824.) (FLIGHT Photos.)

The International Touring Competition

By EDWIN P. A. HEINZE

After a most exciting flight around Europe, the 1932 competition has been won by the Polish pilot Zwirko, who was flying a RWD-6 monoplane fitted with Armstrong-Siddeley "Genet Major" engine

PUNCTUALLY at 7 o'clock in the morning of Sunday, August 21, the machines were lined up on the Berlin-Templehof airport for the start on the long air tour, which was to take them 4,530 miles over Europe in six days of flying. However, of the 41 machines that had successfully completed the technical tests now only 39 were left.

The first group of 15 machines was let off between 7 and 7.10 in batches of five, the second group from 7.15 to 7.25, and the last from 7.30 to 7.40 o'clock, arrangements having duly been made to counteract the loss of time sustained by those last started in regard to the closing times at the various landing places en route.

The competitors were given two days to reach Rome *via* Warsaw, Cracow, Prague, Brno, Vienna, Zagreb (Agram), Postumia, Vicenza and Rimini, a distance of approximately 1,550 miles, and with compulsory stops at all these places, barring Postumia, which was solely a turning mark.

Two ratings were given for the air tour, the one for reliability and the other for average speed. To start with, each competitor was credited with 40 points for reliability. Of these, 15 were deducted if the machine spent one night outside one of the compulsory landing places. In the event of this being repeated a second time further 25 points were to be deducted, and a third time was to be followed by disqualification.

The average speed rating was effected on a progressive basis. Machines of the first category averaging less than 125 km./hr. on the air tour, including the speed they attained in the fuel consumption test, were to be disqualified. For speeds between 125 and 130 km./hr. no

points were awarded; for speeds exceeding 130 to 180 km./hr. 3 points were allocated for each km./hr.

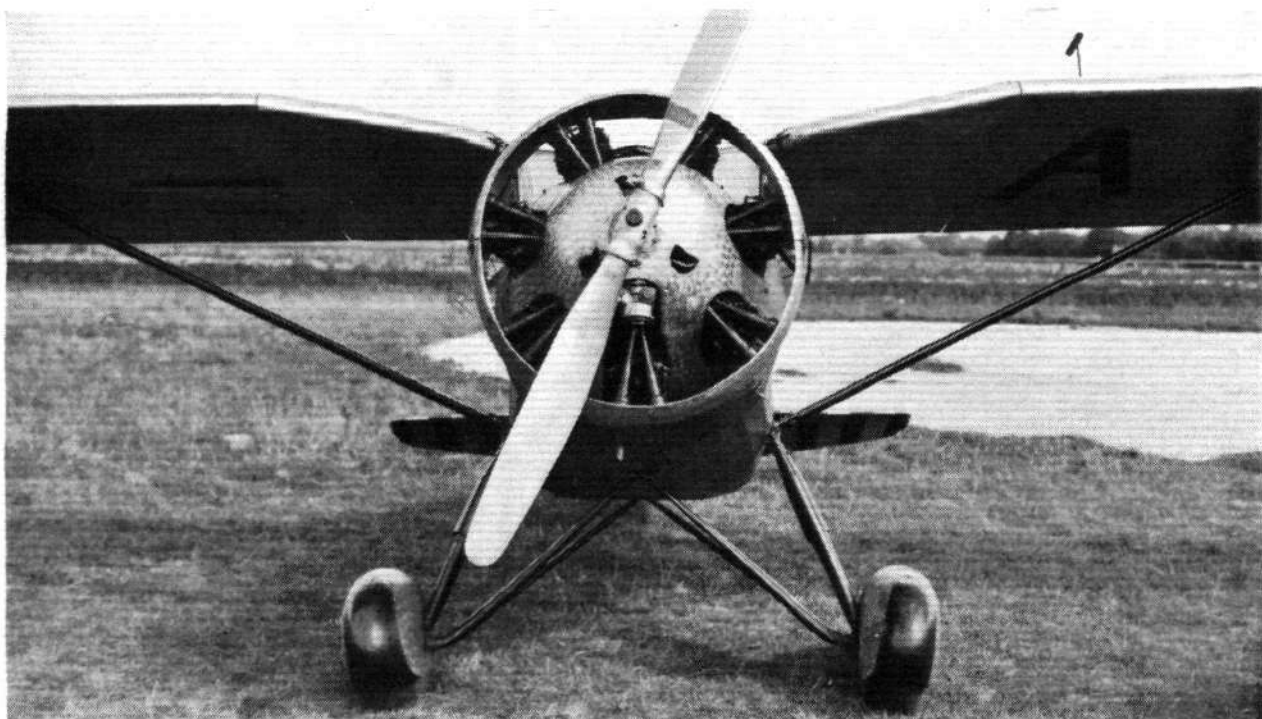
To prevent racing, the higher speeds were rated relatively lower. For speeds between 181 and 190 km./hr. 2 points were given per km./hr., and between 191 and 200 km./hr. only 1 point, so the highest number of points anyone could obtain was limited to 180. The rating for second category machines, of which only a single one, the Mauboussin of Nicolle, took part, was on similar lines, but with lower speeds.

The first stage of the air tour began with an interesting duel between the Italian Breda of Colombo and the German machines, which proved very fast and, in this respect, superior. Colombo, who had started with the first group of machines leaving Berlin, immediately took the lead in the air, but he lost it to the Akaflieg biplane of Marienfeld before reaching Warsaw. From there to Brno in Czecho-Slovakia Marienfeld continued to lead, but a prolonged stop at this place allowed Colombo once more to regain the lead, which he then retained till Agram (or Zagreb) was reached, where, in the following stretch, he was passed once more by Marienfeld, who in turn was caught by Seidemann's Heinkel. Also von Massenbach's Heinkel succeeded in overhauling Colombo before Vicenza was reached, where the head group stayed for the

night. The first to arrive in this first Italian stop was Seidemann at 19.10 o'clock, followed at a few yards distance by Marienfeld. Then came in von Massenbach and, as fourth, Colombo, who was followed some time later by Lusser's "Klemm," which landed six minutes before 8 p.m., the official closing time. These five



THE WINNER : F. Zwirko, flying a RWD 6 monoplane ("Genet Major" engine), won the International Touring Competition, 1932, and, as a result, the next contest will be organised by Poland.



TROUBLE-FREE FOR 5,000 MILES : The Armstrong-Siddeley "Genet Major" engine fitted in Zwirko's monoplane helped greatly in producing an Anglo-Polish victory.



THE 'END OF A PERFECT FLIGHT': Zwirko crossing the finishing line on Templehof aerodrome at the end of the speed test.

machines had thus nearly covered the two-days' stage in a single day, having flown a distance of approximately 1,285 miles.

The majority of competitors spent the night at Agram (Zagreb). At Vienna also many pilots took lodgings for the night. The only one to stop at Prague was Nicolle with his Mauboussin. The remainder were stragglers staying at various back ports.

The first two-day stage already took considerable toll. The Argus engine of von Cramon's Heinkel had its crankshaft broken as the lubrication system would not function, although the pilot had already made an emergency landing at Posen in order to attend to it. He had to come down close behind the Polish frontier. At Posen, too,

landed the Italian Donati with his Breda-33. He had trouble with his magneto and lost nine hours. Later on at Prague Donati then gave up finally. At Vienna the Swiss Straumann's flight came to an unexpected termination owing to trouble with his wings. The Praga machine of the Czecho-Slovakian Mare had to make a forced descent near Padua on account of engine failure, and crippled the machine in doing so. Lebeau had to go down with his "Gipsy-engined" Farman near Vicenza. His was a particularly unpleasant experience, as his machine fell into the river Piave, so he and his companion had to reach the shore by swimming in their flying dress. At Rimini the German, Raab, retired on account of engine failure, and so only 33 machines arrived out of 39 at Rome.

It was natural for Colombo to make every effort to reach Rome before his rivals. But his machine could not keep up with the Heinkel of Seidemann and the Akaflieg of Marienfeld. Seidemann landed at Rome on August 22 at 7.54 a.m., followed at 8.03 by Marienfeld and 8.04 by Colombo, fourth this time being von Massenbach's Heinkel, and fifth again Lusser ("Klemm") at 8.13, one minute behind von Massenbach.

A wonderful morning dawned on August 23 over the Roman airport of Littorio, where already at 5 a.m. everything was astir. By 6 o'clock all machines were lined up for the start on the most difficult but also most beautiful stage of the whole tour. The route to be flown led from Rome to Florence, thence over the lakes of Como and Maggiore to the mountain-bound Swiss military airport of Bellinzona, where cloudy weather awaited the competitors. Returning from here to Italian soil the next stop was at Turin, from where the way lay past the turning marks Albenga and Imperia on to the fashionable French seaside resort Cannes. Then followed the rather dangerous stretch across the southern Alps, which nowhere offer a single possibility for an emergency landing, to Lyons. What then follows is still a wonderful landscape but offers no special difficulties. The way continued to St. Gall, Stuttgart and via Bonn on the left bank of the Rhine to Paris.

This day, which started so bright and promising, was, however, to be a fateful one. With the sixth beat of the clock in the morning in Rome von Massenbach's Heinkel, Nicolle's Mauboussin and Orlinski's PZL started together for Florence. Five minutes later followed the "Klemms" of Cuno and Morzik, together with Arnoux's Farman, Détré's Potez and the "Klemm" of Fretz. The next group consisted of Stoppani's Breda-33, Bajan's PZL, the

FINAL RESULTS OF INTERNATIONAL TOURING COMPETITION

Position	Pilot	Machine	Engine	Points after Technical Tests	Air Tour			Race		Total Number of Points.
					Average Speed. Km.p.h.	Speed Points	Reliab. Points	Average Speed. Km.p.h.	Points	
1	Zwirko ..	RWD-6	Genet-Major	245	191	171	40	214.1	5	461
2	Poss ..	Klemm	Argus	234	197	177	40	220.7	7	458
3	Morzik ..	Heinkel	"	224	200	180	40	241.3	14	458
4	Stein ..	"	"	221	208	180	40	236.8	12	453
5	Fretz ..	Klemm	Gipsy III	231	197	177	40	211.2	4	452
6	Hirth ..	"	Hirth	230	203	180	40	136.6	0	450
7	Cuno ..	"	Siemens	224	198	178	40	215.1	5	447
8	Seidemann	Heinkel	Argus	214	213	180	40	239.0	13	447
9	Lusser ..	Klemm	"	219	193	173	40	214.3	5	437
10	Karpinski	RWD-6	Genet-Major	238	*	*	*	216.2	5	435
11	Bajan ..	PZL-XIX	Gipsy III	223	188	166	40	212.9	4	433
12	Kalla ..	Praga	"	192	191	171	40	214.3	5	428
13	Pasewaldt	Klemm	Siemens	219	185	160	40	213.7	5	426
14	Osterkamp	"	Argus	219	187	164	40	210.4	3	426
15	Junck ..	Heinkel	"	225	178	146	40	239.3	13	424
16	von Massenbach	"	"	183	206	180	40	235.2	12	415
17	Marienfeld	Akaflieg	"	145	205	180	40	230.7	10	375
18	Giedgowd	PZL-XIX	Gipsy III	198	164	102	40	215.8	5	345
19	Anderle	Breda-15S	"	143	160	90	40	177.8	0	273
20	Delmotte	Caudron	Salmson	192	141	33	40	—	—	265
21	Kleps ..	Praga	Gipsy III	196	130	0	25	—	—	221
22	Duroyon	Potez	Potez	171	*	*	*	—	—	214
23	Arnoux	Farman	Salmson	89	141	33	40	—	—	162
24	Nicolle ..	Mauboussin	"	111	105	0	40	—	—	151

* Figures not yet available.

Monocoupe of the Roumanian Papana, who started in the German team, and the Praga of the Czecho-Slovakian Kalla. The fourth group to leave Rome was Seidemann (Heinkel), Hirth ("Klemm"), Colombo (Breda-33), Stein (Heinkel), and Marienfeld (Akaflied). Then came the remainder. Junck had difficulty in getting his engine going, and could not start for some time.

On this day was cast a shadow. Near the turning point of Albenga on the Italian coast the Breda-33 of Suster crashed down with fearful force as one of the wings had given way suddenly. Suster was able to leave the machine by parachute, but sustained severe injuries, whilst his companion, who could not get out of his cockpit in time, was buried under the debris and instantly killed. The Italian Air Minister, Signor Balbo, immediately ordered the Italian team to withdraw from the contest, as further accidents were to be feared since also de Angeli's machine made a forced descent in the nick of time at Cannes with a fractured wing.

The withdrawal of the Italian competitors has robbed the contest of much of its sporting interest, much to the regret especially of the German pilots.

The day, however, also had its bright side. The German Heinkel pilot, Seidemann, up to this competition a relatively obscure man, accomplished an astounding performance by reaching as sole competitor Paris in a single day, where he arrived 7.50 p.m., ten minutes before closing time, surprising the stewards at Orly, who were not expecting anyone that day, though, of course, they were at their post. He averaged 235 k.p.h. (146 m.p.h.).

The Baron von Massenbach with his Heinkel was in pursuit of Seidemann, but arrived too late at Bonn to be able to risk the trip to Paris, which he reached next morning as first man at 7.45 a.m. He was followed at 9.28 a.m. by Marienfeld, at 9.46 a.m. by Lusser's "Klemm," at 10 a.m. by the Swiss, Fretz, with his "Klemm-Gipsy," at 10.01 a.m. by Morzik in his Heinkel, and five minutes later arrived Poss with his "Klemm." At 10.10 a.m. arrived Kalla with his Praga, followed 13 minutes later by his compatriot, Kleps, also with



SECOND AND THIRD : Morzik (left) and Poss gained the same number of points, the former flying a Heinkel (Argus) and the latter a "Klemm" K1.32 (Argus). Morzik has twice won the International Touring Competition.

Praga. Wolf Hirth was ninth to arrive with his "Klemm" at 10.36 a.m. Then there was a pause for some hours at Orly, where at 1.15 p.m. the first Polish pilot, Giedgowd, with his PZL-XIX, arrived. Eleventh was Stein's Heinkel, which came in four minutes later. At 2.49 p.m. arrived Cuno's "Klemm," at 3.11 p.m. Osterkamp's "Klemm," at 4 p.m. Pasewaldt's "Klemm," which was followed 3 minutes later by Anderle's Breda-S15. As sixteenth followed more than an hour later at 5.05 p.m. Junck's Heinkel. Then, at 5.28 p.m., arrived simultaneously the French Farman of Arnoux and the PZL-XIX of Bajan, the second Polish machine to arrive. At 6.18 p.m. Delmotte's Caudron biplane crossed the line, at 6.35 p.m. Duroyon's Potez, and one minute later the second Potez with Détré, to be followed five minutes later by a third Polish competitor, Karpinski, with his RWD-6. Also Zwirko arrived, but very late, since he flew a rather round-about course to avoid the bad weather in the Alps. Very late at night also Nicolle's small Mauboussin came in. So that altogether 25 competitors finished the second great flying stage. During this stage the Germans have been able to make good a considerable number of points against

the Polish competitors, who still top the list. These have lost a large number of points owing to circuitous flying. Orlinski made several attempts to continue his flight from Lyon, but the weather was so bad that twice he returned to Lyon, where finally he retired. A minute before his last return, at 8.52 a.m. on August 24, Zwirko and Karpinski, the two pilots topping the technical rating after the withdrawal of the Italians, had started and made the circuitous flight referred to, which caused them to arrive at St. Gall not before 11.52 a.m., while their compatriot, Bajan, who flew through the bad weather, already landed at 11.21 a.m. there.

The Last Stage

The third and final air tour stage was completed on August 27, when, at 6.24 p.m., Nicolle's small Mauboussin was the last to reach the airport of Berlin-Staaken. These 1,490 miles from Paris to Deauville, Rotterdam, Dortmund, Hamburg, Copenhagen, Göteborg and back via Hamburg to Berlin did not prove



SECOND AND THIRD PLACE : The Argus engine was fitted in Morzik's Heinkel and Poss's "Klemm." It is here seen in the latter.

difficult, and no more competitors were forced to retire, although partially unpleasant weather was encountered. The fact of so few competitors having this year suffered from engine trouble and that practically all remaining in the competition have gained or rather retained the full 40 marks they were originally credited with for reliability, speaks volumes for the progress made in engine construction. It also demonstrates the untenableness of the opinions held not so very long ago, at least in the ranks of German engine builders, that relatively slow and, therefore, unavoidably large engines are to be preferred. At one time one would not go much beyond 1,800 r.p.m. in engines even of the relatively small type to be employed for planes of the class participating in this competition. Also in this respect the regulations of the competition have had a wholesome influence on design, for the new high-speed engines, coupled with metal propellers, now being employed have thoroughly proved their worth, and have additionally demonstrated their high degree of economy. All round, therefore, it cannot be denied this excellent competition, especially in this year's form, has contributed tremendously to the development of fast and light touring planes and their engines.

Seidemann and von Massenbach with their Argus-engined Heinkel and the German air-transport pilot in charge of the Akaflieg biplane, Marienfeld, who have nothing to lose since they are hopelessly handicapped by the low number of points they scored in the technical part of the contest, opened out all they could after leaving Paris, and completed the tour in a single day. Seidemann reached Staaken at 6.36 p.m. on Friday evening, August 26. Marienfeld crossed the line at 7.19 p.m. and von Massenbach at 7.33 p.m. Theirs was doubtless an excellent performance, which brought just that amount of sensation into the competition that was required to stir public interest to its depths. But there is, of course, no doubt many of the other competitors could easily have followed suit had they chosen to do so. But they had winning chances and did not like risking their engines in fruitless speeding, rather nursing them for the final spurt in the afternoon's race over the triangular 186 miles course. They just flew so as to top the 200 kilometres per hour average required to gain the full number of 180 points and stayed for the night at the one or other compulsory stop.

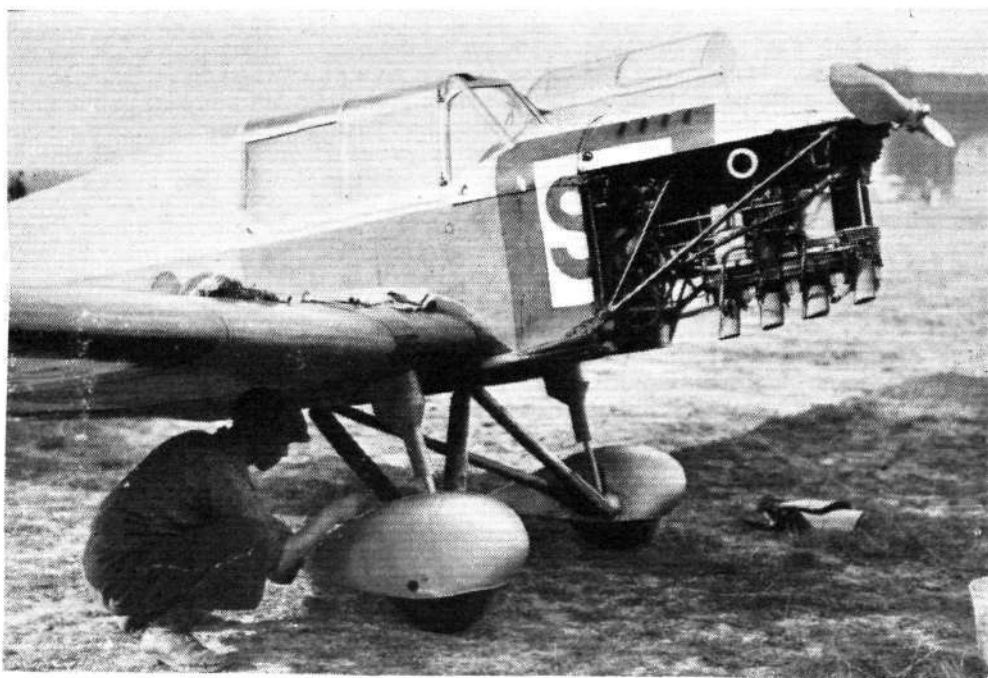
The first to arrive Saturday morning here was the chief pilot of the Heinkel factory, Junck, who passed the line at 7.14 a.m., followed 9 min. later by Osterkamp's Klemm. Five competitors arrived between 9 and 10 a.m., these being at 9.03 a.m., Hirth (Klemm-Hirth) at 9.07 a.m., Stein (Heinkel-Argus) at 9.24 a.m., Morzik, the winner of the last two competitions in 1929 and 1930 (Heinkel-Argus), at 9.33 a.m. Pasewaldt (Klemm-Siemens) and at 9.54 a.m. the Pole, Giedgowd (PZL-Gipsy). Then there was a pause as regards new arrivals.

At 11.27 a.m. on Saturday Lusser's Klemm-Argus dashed over the finishing line at Staaken. A few minutes later the Klemm-Gipsy of the Swiss, Fretz, hove into sight in the western sky and passed the line at 11.31 a.m. The weather was exceedingly hot and visibility not very good, but at Berlin there was at least no rain as had been the case for some time in Hamburg, where many machines had to be replenished with fuel under large umbrellas. At 12.11 noon arrived Arnoux in his Farman, at 12.43 the Pole, Bajan, in his PZL, followed 13 min. later by the Czecho-Slovakian competitor, Anderle, in his Breda 15.S. At exactly 1 p.m. Zwirko's RWD.6, the competitor with the highest number of marks, crossed the line. One minute later came his compatriot, Karpinski, in the second RWD.6 with Genet-Major engine. Delmotte (Caudron) finished at 1.04 p.m., Duroyon (Potez) at 1.15 p.m. The second Potez, with Détré, arrived at 3.36 p.m., behind Poss (Klemm-Argus) and Cuno (Klemm-Siemens), who

crossed the line simultaneously at 3.09 p.m., and the Czecho-Slovakian, Kalla (Praga-Gipsy), at 3.22 p.m. Then, at 4.04 p.m., came the second Praga-Gipsy, with Kleps. The arrival of Nicolle later completed the field of the 25 competitors still taking part.

The Speed Test

It is dull but warm weather in the afternoon of August 28. Rain clouds threaten a deluge, but appear to bethink themselves. A wind of 16 ft. per sec. is blowing from the west, from Staaken way; it is, however, gradually subsiding. The spacious enclosures on the northern border of this airport are thronged with spectators and the restaurant is doing great business, as also are the booths with refreshments. Flags are gaily fluttering in the wind and a big band is playing lively military marches. Spirits run high! Chalked over half the field is a thick white line. That is the finishing line, and the International Committee has been breaking its heads over establishing the handicaps for the start of the competitors. The idea is to



FIFTH: The De Havilland "Gipsy III" engine fitted in the "Klemm" flown by the Swiss pilot, Fretz.

arrange things so that the man first crossing the finishing line after the race (starting at Staaken some 12 miles or so west of Berlin-Tempelhof) will actually be the winner of the whole contest. That is to say, not the fastest machine will be the first to finish, but the one having the highest number of points. The fastest machines, therefore, had to be handicapped to such an extent that, if they actually did come through first they had gained so many points in this race as to catch up and supersede the competitor with initially more points to his credit. So it comes that machines are being let off in Staaken at carefully determined intervals. Coming from there they have to pass over the Tempelhof airport, and fly on to Frankfort-Oder, which is not to be confused with Frankfort-Main down south-west in the Rhineland. Frankfort-Oder is about 62 miles west of Staaken. There the competitors have to round a mark and continue south-west to a small town called Dobrilugk, about 65 miles away from Frankfort-Oder. From Dobrilugk the machines have to turn north back to Tempelhof, another 58 miles or so to the finish. At all turning marks the competitors have to throw off little bags with their numbers as a means of controlling their passage.

Zwirko, who has most points to his credit, 456 in number, is sent off first in Staaken punctually at 3.15 p.m., and presently his machine is sighted in the hazy western sky coming up fairly fast. He comes down slightly to pass over the line, and is soon out of sight over the distant houses bordering the eastern part of the airport. Fully 5 min. later Poss is let off with his Klemm. He has 451 points. One minute after him comes Hirth in his powerful Klemm, with the 8-cylinder engine developed by

his brother, Helmuth. Two minutes later starts the young Swiss, Fretz, in his Gipsy-engined Klemm. They all come over Tempelhof at full speed one after the other. Three minutes after Fretz and fully 11 after Zwirko rises Morzik. Cuno, in his Klemm-Siemens, starts at 3.28 p.m. The last machines start at intervals of 30 sec. and the eyes of the crowd are all turned west to see whether anyone succeeds overtaking another in this short distance between Staaken and Tempelhof. The loudspeakers closely follow the happenings, and in between plays the band. In a pause one hears the whole French team and the Czechoslovakian Kleps, who, it transpires, during the last stage of the great air tour, had to come down between Copenhagen and Göteborg with engine defect costing him a night outside the compulsory stops and 15 marks off his reliability credit of 40 points, have chosen not to take part in this race since their machines are too slow to have any chances. Thus six of the 25 competitors drop out.

Now the time approaches for the first report to come through from Frankfort-Oder. Furtively, everyone looks at his watch. Zwirko is the favourite. But there lingers at the back of everyone's mind, of every German's mind, to be more precise, a hope that after all Hirth's powerful engine will pull him through, or that Morzik may accomplish some wonder, Morzik, the idol of the masses, who has twice won this great competition. Then at last—everyone is highly nervous—comes the message. Zwirko has passed Frankfort at 3 hr. 42 min. 47 sec. Poss is presently announced as second. He passed at 3 hr. 47 min. 33 sec., and has thus gained a few seconds. There is no hope of him being able to catch Zwirko in this short race! Then comes news of Hirth having turned the Frankfort mark. He has caught up fully 73 seconds of the 5 minutes on a third of the stretch. Morzik has passed Fretz on the way to Frankfort, and has rounded the mark at 3 hr. 51 min. 2 sec. His handicap of 11 min. has shrunk to 8 min. 15 sec. He has opened out tremendously and is evidently the fastest so far. A keen fight has set in at the head of the field, and impatiently the crowds await the reports from Dobrilugk. At last it comes. The man at the loudspeaker seems to take minutes to come to the point, no, hours these seconds appear. Zwirko is still leading. But

Hirth has now made good three of the six minutes. Poss has dropped to third place and Morzik is fourth, with six minutes made good, so now only five minutes separate him from Zwirko. There are only about 55 miles to go. Will Hirth be able to catch up the remaining three minutes or Morzik the five? Excitement has now reached the heat of frenzy. Minutes before the first machines can possibly appear on the southern horizon amidst the chimney stacks of the Tempelhof factories binoculars and all eyes are turned in that direction. Then a momentary spasm of utter silence. Quite dim, far, far south, appears a small streak. Then a big shout, half disappointment, half joy, goes up. It is unmistakably the shoulder-wing monoplane of the Pole, Zwirko, the one-time Germany Army pilot. While he is coming nearer a second machine comes into sight. It is a low-wing machine. It is Hirth! But really is it? One is not quite sure. In the meantime Zwirko crosses the line amidst cheering and waving, but when he comes down, the masses are too much occupied with the other competitors appearing in the distance. Hello, Hirth is not Hirth—it is Morzik! Tremendous cheering sets in. Hats go up; people are almost weeping. Stupendous excitement! But there is a machine on his tail. It is Hirth. But, the Dickens, what is he doing? He comes gliding down straight on the field without passing the last turning mark in the west of the field. His machine comes to a standstill. Eager air police run to it, and presently it is pushed to the hangar west of the enclosures. The most miserable of ill luck has beset poor Hirth. Within sight of the finishing line the petrol pipe has broken!

Zwirko finished at 4 hr. 42 min. 1 sec. Morzik at 4 hr. 43 min. 24 sec., 1 min and 23 sec. behind Zwirko. Had the race been longer by only a few miles Morzik would doubtless have caught Zwirko. Third was Poss, 67 min. behind Morzik. Yet Poss, in the final rating, which took hours to calculate, was eventually classified as second, because he had attained the same number of points as Morzik, and in cases of a tie the landing and starting performance during the technical tests was to decide. Gradually all the others came in, and thus finished the 1932 International Touring Competition, more full of excitement and interest to the last minute than ever before.



Airport News

FROM HESTON

SUNDAY, August 21 (late news).—Night flying continues in popularity—some of those viewing the lights of London from the air were Visct. Gort, V.C., and daughter, also Lt. Col. W. S. Pilcher, D.S.O., Grenadier Guards, with Mrs. Pilcher, while Mr. and Mrs. Francis Francis both had practice in night landings.

Monday.—Capt. C. D. Barnard, of Banco, brought back "The Spider" from Deauville with six passengers, and Dr. Bonnicksen returned from Paris during the evening.

Herr Striwsky, chief pilot to the Jugo Slavian Postal Air Service, arrived in a "Puss Moth," UN-SAA, which has been regularly flown on this service. He is taking back a "Fox Moth" in replacement.

Tuesday.—Miss Winifred Spooner arrived from Berlin in her "Breda 33," as did Mr. Perkins in his "Moth."

The "Fokker" of Surrey Flying Services picked up three passengers and left for Cologne.

Wednesday.—Sir Francis Humphreys, High Commissioner for Iraq, paid a visit to Heston to-day. After lunching with the directors of Airwork, Ltd., he was flown to de Havilland's works at Stag Lane in a "Puss Moth."

The Hon. R. B. Gurdon resumed his flying instruction.

Thursday.—The "Puss Moth" of Personal Flying Services, Ltd., left at 9 a.m. for Le Touquet, returning to Heston with two passengers at 12.20 p.m.

Banco had an urgent charter to take Lady Forbes Robertson to Cannes to visit her sister, who was taken ill while staying there. The machine was off with most commendable promptitude, leaving within ten minutes of the receipt of the order.

A party from the Ladies' Branch of the Hounslow Co-

operative Guild made a tour of the Airport this afternoon.

Friday.—The "Puss Moth" of Banco returned from Cannes, Mr. St. Barbe making the extremely quick time of 3½ hours from Cannes to Paris and 1 hr. 59 min. from Paris to Heston. As he arrived, at 4 p.m., Capt. Barnard, for Banco, left in "The Spider" for Deauville with a passenger list of seven. This is becoming a very popular mode of proceeding to Le Touquet and Deauville.

Mr. F. Flower made his first solo flight, after 6 hr. 10 min. dual instruction.

Saturday.—The bad visibility prevented much instruction being carried out during the morning, but Capt. Ferguson took advantage of this to proceed on a cross-country flight to Canterbury with a School of Navigation pupil.

Personal Flying Services, Ltd., "Puss Moth," piloted by Capt. W. Ledlie, left for Berck with Mr. John Gilbert Goldsmith and Mrs. Beatrice Elizabeth Rayson on their honeymoon. Capt. Ledlie returned to Heston later.

Sunday.—Several machines, after waiting some time for the mist to clear, set off for Littlestone, from where they departed to Dungeness by a special train on the miniature railway, driven by Mr. Nigel Holder. After bathing and lunch the party returned to Littlestone by the miniature railway, and thence to Heston by air.

Lt. Com. Geoffrey Rodd cleared Customs and left in his "Puss Moth," accompanied by Mrs. Mollison for Berck to bathe. They returned to Heston during the evening.

Three large parties from different Motor Cycling Clubs appeared at Heston during the morning.

Sir John Simon was flown to Banbury by Mr. Maurice Jackaman in the "Puss Moth" of Mr. Nigel Norman.

Air Transport

New Air Line—Poland to Baltic States

A NEW passenger air line from Poland to the Baltic States has been opened. It runs between Warsaw and Tallinn, via Vilna and Riga.

Imperial Airways Traffic

THE receipts of Imperial Airways during July amounted to £112,152, as compared with £80,789 a year previously. The total receipts since the beginning of the financial year (April 1) were £323,185, against £237,662 for the corresponding period last year. Other traffic figures for July with last year's comparative figures shown in brackets were:—Miles flown, 194,216 (169,886); ton-miles flown, 231,694 (131,808); ton-miles flown since April, 655,381 (369,165).

Times of Posting of Air Mail

THE Postmaster-General announces that on and after September 1, in consequence of changes in the timing of the air services the latest times for posting air mail correspondence for European countries in the Air Mail letter-box outside the General Post Office, London, will be as follows:—

WEEKDAYS	
6.45 a.m.	.. Belgium, France, Germany (Cologne), Italy, Switzerland.
7.30 a.m.	.. Austria, Czechoslovakia, Danzig, Estonia, Germany (Berlin), Latvia, Lithuania, Poland, Russia in Europe.
8 a.m.	.. Denmark, Finland, Holland, Norway, Sweden.
10.30 a.m.	.. France, Holland, Italy, Spain, Switzerland.
10.30 a.m.	.. (Except Saturdays) Denmark, Norway, Sweden.
3 p.m.	.. (Except Saturdays) Belgium.
8 p.m.	.. Austria, Bulgaria, Czechoslovakia, Danzig, Denmark, Germany, Greece, Hungary, Latvia, Lithuania, Poland, Rumania, Turkey, Yugoslavia.
8 p.m.	.. (Except Saturdays) Switzerland.
SATURDAYS	
8 p.m.	.. Norway, Sweden.

The latest time of posting air mail correspondence for North Borneo, Brunei, Sarawak, Dutch East Indies, Siam, and the Straits Settlements and Malay States will be 10.30 a.m. on Wednesdays, instead of 5 p.m.

The latest time of posting air mail parcels for Denmark, Norway, and Sweden at the General Post Office, London, will be 9 p.m. on weekdays (8 p.m. Saturdays), instead of 9 a.m.

Air Mail for Iraq is now despatched on Wednesdays as well as Saturdays, that on Wednesday being conveyed to Cairo by the direct England-S. African air mail service,

from Cairo to Ramleh by train, and from Ramleh to Baghdad by air, reaching the latter the following Monday evening, five days after leaving London. Latest time of posting is—for the present—4 p.m. on Wednesdays at the General Post Office, London, and the postage rates are the same as for air mail for Iraq, which is sent by the England-India service on Saturdays.

An Aeropostale Mail Boat Lost

ABOUT a year ago the Cie. Generale Aeropostale took delivery of a number of small mail packet boats to convey mail from Dakar across the Atlantic to Natal in Brazil. One of these boats has been missing since August 13 and must be presumed lost. It had on board a crew of 22 officers and men, of whom 10 were French, the lower deck being manned by negroes and Chinese.

Cross-Channel Air Traffic Growth

WITH the arrival at Croydon on August 24 of the Imperial Airways liner "Horatius," British civil aviation completed its 13th year of working.

On August 25, 1919, Capt. S. H. Lawford left Hounslow Aerodrome piloting a modified "D.H.4" seating three for Paris on the first regular cross-Channel passenger air service.

During the first year an average of 20 passengers a week flew the Channel. The total has steadily risen, until last week nearly 3,000 air travellers entered or left Croydon Air Port.

Growth of the Air Mail

IN the last twelve months about three million letters from this country have been carried by air mail, an increase of half a million over the figures for the previous year. Nearly half of the total goes to India or the countries on the route to India. Some British towns have a heavy regular mail for certain places overseas. It is not surprising to hear that Aldershot sends many letters by air to India. Hull has a heavy air mail each week for the Scandinavian countries.

Progress at Manchester Airport

THE control tower at the Manchester Airport at Barton should be up in about eight weeks, and the meteorological station will begin operations as soon as the tower is ready.

The tower will be equipped with both direction-finding wireless and transmitting apparatus, and the last will be used for transmitting weather reports to the Air Ministry.

SPARTAN DEMONSTRATION AT HESTON

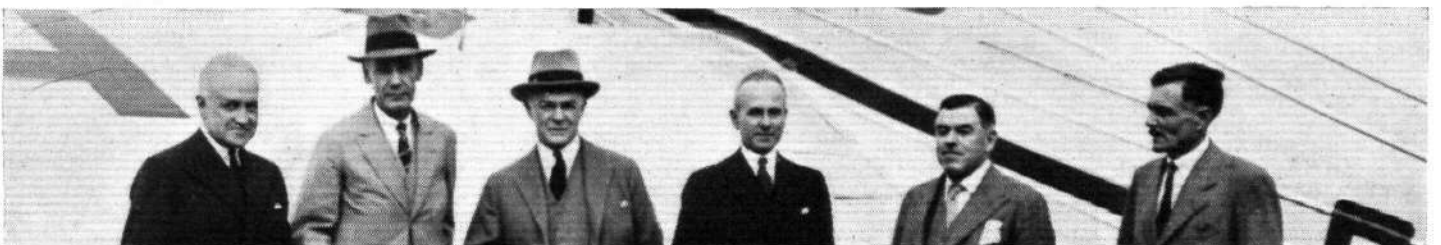
SPARTAN AIRCRAFT, LTD., and Henly's, Ltd., who are sole concessionaires in this country for Spartan aircraft, invited a select gathering to luncheon at Heston Air Park on August 30, followed by a demonstration of the latest Spartan types, the "Cruiser" (described in FLIGHT, July 22 last), and the Spartan three-seater. The Spartan mailplane from which the "Cruiser" has been developed, and which was recently flown to India and back, was also on view.

After demonstration flights of the "Cruiser" by Lt. Col. L. A. Strange and Flt. Lt. S. D. Scott, chief test pilot to Saunders-Roe, Ltd., several pilots were invited to fly the monoplane, and responded, among them being Capt. C. D. Barnard, Capt. V. A. Baker and Mr. A. B. H. Youell (Imperial Airways). Our illustrations show the line-up of the Spartan types, with the new three-seaters



The Spartan Line-up. (FLIGHT Photo.)

in the foreground, and a group of directors of Spartan Aircraft, Ltd., namely (L. to R.), Mr. J. de Ballardie, Mr. W. D. L. Roberts, Mr. A. E. Chambers, Sir Alliott Verdon-Roe, Mr. John Lord, and Lt. Col. L. A. Strange.



The Spartan Aircraft Directors. (FLIGHT Photo.)

Airisms from the Four Winds

The Week-end Aérien

THE entertainment of foreign air pilots during the coming week-end by British pilots who have enjoyed help and hospitality abroad will be on a still bigger scale than was anticipated when the project was first mentioned. Visitors from some 16 foreign countries will be coming to England. Acceptances have been received from pilots in Spain, Portugal, Finland, Norway, Sweden, Denmark, Austria, Hungary, France, Belgium, Germany, Holland, Poland, Czechoslovakia, Yugoslavia, and Switzerland; over 50 foreign aircraft being expected to attend. Most of the machines will carry passengers, and one visitor from France, Mlle. Deutsche de la Meurthe, will bring a party of five, including M. Bleustin, the Vice-President of the Paris Aero Club. Sir Philip Sassoon will act as chairman at the banquet being held at the May Fair Hotel on Saturday evening.

The Toll of the Atlantic

MR. CLYDE LEE and JOHN BOCHKON left Harbour Grace at 7.36 a.m. (local time) on August 25 and nothing has been heard of them since. They had fuel for 37 hr. and expected to land at Oslo about 6 p.m. (B.S.T.) on August 26. It must be assumed that yet another single-engined aeroplane has proved itself the wrong type in which to fly the Atlantic.

The Family Tour

THE Hutchinson family, who are touring to England via Greenland and Iceland in a Sikorsky amphibian, arrived at Port Memien, Anticosti Island, in the St. Lawrence River, on August 25, and were then held up by bad weather. They flew to Hopedale, Labrador, on August 30.

International Air Conference

THE Annual Conference of the Fédération Aéronautique Internationale will be held at The Hague on September 5-9, 1932.

The Conference will mainly concern itself with questions relative to the granting of World's Records and International Air Touring. Reciprocal arrangements between National Clubs to assist air tourists already exist, but facilities for insurance, third party damage, customs, petrol supplies, landing fees, passports, etc., have still to be improved upon.

The Royal Aero Club, which is the officially recognised body in this country, will be represented at the Conference by Lieut. Col. M. O'Gorman, Col. The Master of Sempill, Maj. C. J. W. Darwin, and H. E. Perrin.

New Records for Women Pilots

MRS. PUTNAM (Miss Amelia Earhart) has set up another record for women flyers by making a solo non-stop flight across the United States. She left Los Angeles at 4.47 p.m. (B.S.T.) on August 24 and arrived at Newark, New Jersey, at 11.31 (B.S.T.) on August 25. Her time of 19 hr. 4 min. was only 1 hr. 25 min. more than the coast-to-coast record of Capt. Frank Hawks.

Her flight was more than 2,500 miles, thus she established a new long-distance flight for women, eclipsing Miss Ruth Nichols's 2,000-mile record by a wide margin.

Mr. Mollison

As recorded last week, Mr. Mollison reached New York on August 21. On August 24 he was entertained at a banquet given by the United British Societies. From then until August 28 he was detained by unfavourable weather reports, and even then fog prevented him from finding St. John, New Brunswick, and he alighted some 20 miles from the aerodrome. Unfavourable weather kept Mollison in New Brunswick until August 29, when he flew to Sydney, Nova Scotia, failed to locate the aerodrome in the bad weather which he encountered, and landed safely in a field. He proposed to go on from there to Harbour Grace as soon as the weather improved.

New Aircraft Name

THE Westland P.V.6 type of aeroplane is henceforth to be known as the "Wallace." It is the custom of the Air Ministry not to sanction a name for a new type of Service aircraft until it has been decided to place an order for that type for use in the Royal Air Force.

An Echo of Salt and Taylor

INTEREST has been aroused by a report from Rangoon, dated August 25, that two aviators have been seen in the district where they were last known to have been.

The Deputy Commissioner at Thaton wires that two

aviators have been traced at Balacheik Hill, in the Paung township, which is on the eastern side of the Gulf of Martaban, about eighty miles from Rangoon as the crow flies, and between Thaton and Moulmein.

The Return from Ottawa

THE Prime Minister, Cabinet colleagues, and many Parliamentary friends were on the platform at Waterloo on August 26 to welcome Mr. Baldwin and his colleagues on their return from Ottawa.

Mr. MacDonald was accompanied by Sir John Simon, the Foreign Secretary. Both had flown in separate machines from Lossiemouth.

The Marquess of Londonderry, the Air Minister, had travelled by air from Ireland to meet the party, but he was unable to be present at Waterloo. He was represented by his private secretary, Mr. I. V. Campbell.

Further Light on the Death of H. G. Watkins

ON Wednesday, August 24, the Danish Government received a message from the British Arctic Air Route Expedition at Angmagssalik, Greenland, saying that Mr. H. G. Watkins had been drowned on the previous Saturday (August 20). Later information stated that "Watkins went out alone in a canoe on Saturday. The motor-boat of the expedition on the same date undertook mapping work. In the afternoon the motor-boat found Watkins's canoe drifting down along the coast full of water. Near it his breeches were found on a drifting ice floe. The expedition and Greenlanders immediately undertook a search, which lasted until midnight and was continued the whole of the next day, without result."

One theory is that Mr. Watkins left his kayak, or Eskimo canoe, to shoot a seal, and that the canoe floated off the ice. He may then have discarded his heavy breeches and tried to swim after it, and been drowned in the icy water.

Mr. Watkins, who was only 25 years old, was already an experienced Arctic explorer. He was educated at Lancing School and Trinity College, Cambridge. While still an undergraduate, he led the Cambridge expedition to Spitzbergen in 1927, and next year led another expedition into the interior of Labrador. He displayed such remarkable qualities of leadership that he was chosen last year to lead the British Arctic Air Route Expedition to explore the possibilities of starting an air service between Europe and Canada over the Greenland Ice Cap. His fine rescue of the marooned Mr. Courtauld will be remembered. The expedition had just returned to Greenland for a second winter when this tragedy occurred. Messages of sympathy have been received from Lord Londonderry (Air Minister), from the Danish Prime Minister, and others. Lord Londonderry's message to Col. Watkins, father of Mr. Watkins, was worded as follows:—

"On behalf of the Air Council I offer deepest sympathy in the death of your son as the result of the tragic accident in Greenland. It has brought to an early close a career which was full of promise and has deprived the country of a keen and resourceful explorer. He endeavoured to find a workable Arctic air route between Great Britain and North America. I greatly deplore his loss."

Flying in Greenland

DR. LAUGE KOCH, the Danish explorer, landed at Akranes, 14 miles from Reykjavik, Iceland, at 9.40 p.m. on Friday, August 26, after flying from Scoresby Sound. This is the first flight on this route between Greenland and Iceland.

The "Cloud" Amphibian

THE Air Ministry announces that the official name of the Saunders-Roe amphibian aircraft (hitherto known as the "Saro Cloud") is "Cloud." This name is to be used in all correspondence and reports.

To South Pole and Back by Air

PLANS for a non-stop flight of 3,000 miles to the South Pole and back are being worked out by Mr. Lincoln Ellsworth, the American explorer.

Mr. Ellsworth proposes to make his flight next July. A ship will be stationed in Ross Bay as a base, and he proposes to fly thence to the South Pole and back.

Previous flights of Mr. Ellsworth include that with Amundsen from Spitzbergen, while in 1926 he flew in the airship *Norge* from Spitzbergen to Alaska.

The "Meteor Mark I"

A New Two-Stroke Aero Engine with Many Novel Features

FOR a great number of years inventors have been busy devising a really satisfactory application of the two-stroke principle to multi-cylinder aero engines. For very small engines of two cylinders there is no difficulty, because the engine can be to all intents and purposes identical with the two-stroke used in road vehicles. When it comes to a multi-cylinder arrangement, however, the designer is faced with much greater difficulties. The main appeal of the two-stroke is its simplicity. If that is lost, and complications have to be introduced, the main reason for the two-stroke disappears. In a radial engine simple 'crankcase compression is no longer possible, because while some of the pistons are moving towards the centre, and would thereby raise the compression in the crankcase, others are moving away from the centre and thus reducing the pressure as fast as it is being raised.

Many schemes have been suggested from time to time, and experimental engines have been built, but hitherto no two-stroke engine has been used to any serious extent in aeroplanes. Our attention has been called recently to a new radial two-stroke engine in which a most ingenious arrangement of the crankthrow mechanism has enabled the inventors to achieve simple crankcase compression for individual cylinders. We would not for a moment suggest that the new engine is as yet ready for the market, or that all its "teething troubles" are over. It does, however, appear that the inventors have proved by the experimental engine which they have built that the principle adopted "works." We have seen the engine running, and although the fuel distribution was somewhat uneven, and the running attended by a good deal of



DESIGNERS AND CONSTRUCTORS TOO: Mr. W. J. Newman (left) and Mr. H. J. Fenner, who invented, designed and built the "Meteor" engine. (FLIGHT Photo.)

vibration as a result, there was no doubt that the engine not only ran but gave a fair amount of power. Incidentally, we understand the tests have been made on National Benzole mixture.

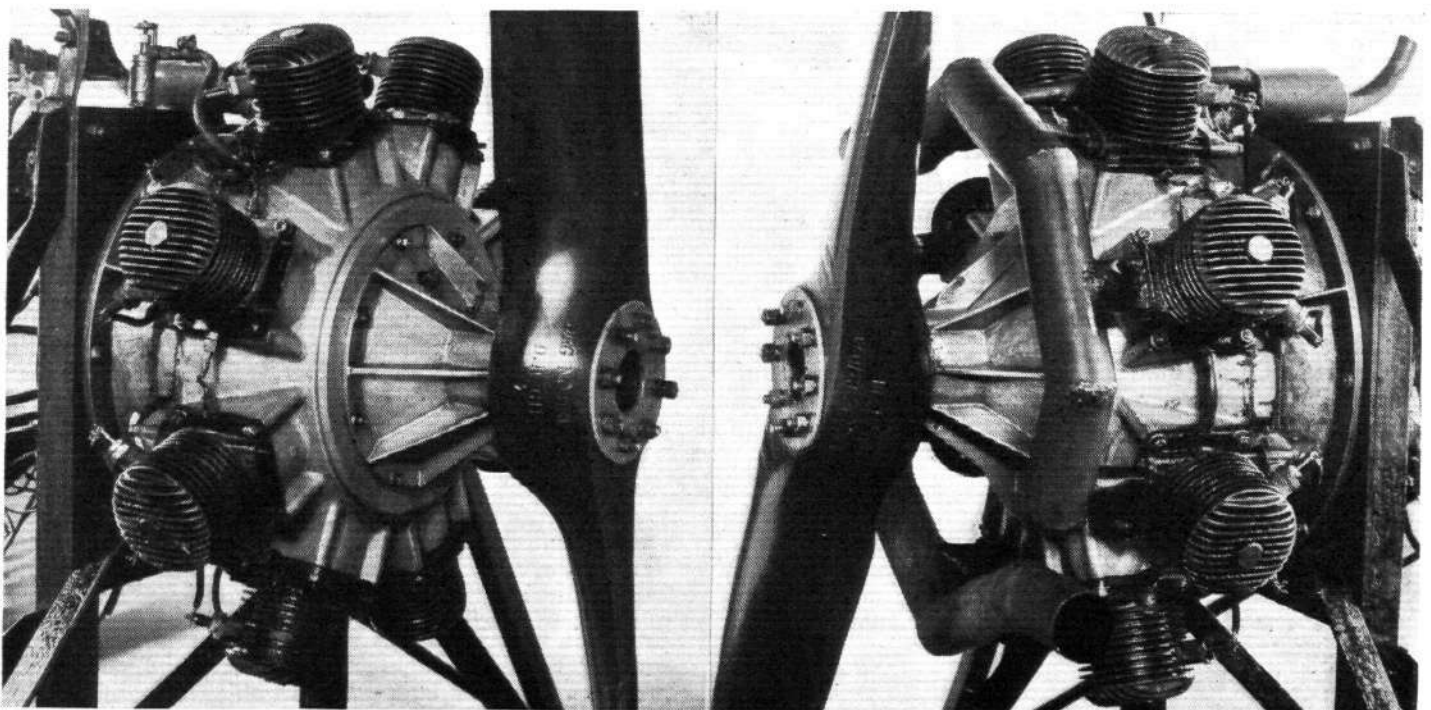
The inventors, designers and constructors of the new engine are Mr. W. J. Newman and Mr. H. J. Fenner, who between them run a small engineering shop under the title of the Meteor Engineering Co., at 237, Kensal Road, London, W.10.

Conceiving the idea about four years ago, Newman and Fenner have been working away at the problems ever since. Their progress has naturally been slow, as they have had no capital and have had to earn their living as they went along. However, the engine is now running, and although much may yet remain to be done to perfect it, the "Meteor" Mark I seems to have proved that a simple two-stroke arrangement, with individual crankcase compression, transfer passages, etc., can be made to work.

The "Meteor I" is a radial air-cooled engine, with eight cylinders arranged in a single bank. The charge is drawn, through a common induction ring, into the eight separate "crankcases" and thence forced through the usual transfer passages to the top of the pistons. Of the mechanism which has made the simple transfer type of two-stroke working possible, it is not desired to say anything at present.

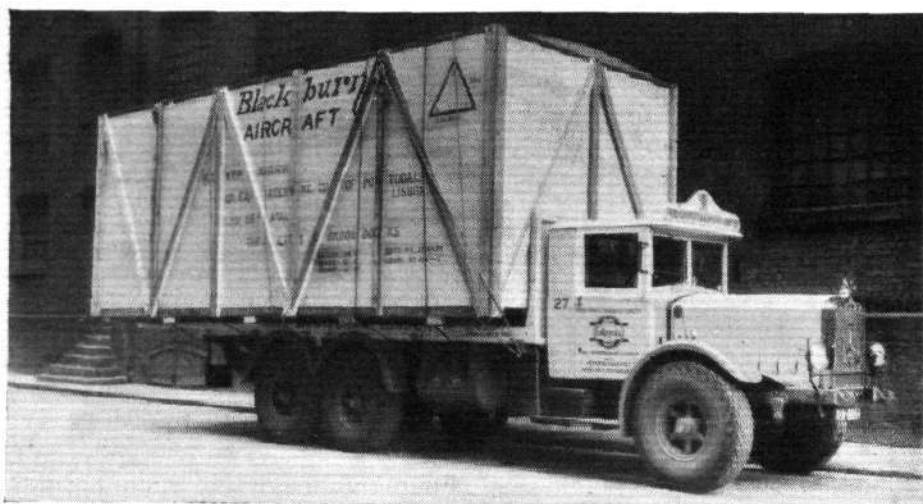
The "Meteor I" has a bore of 73 mm. and a stroke of 63.5 mm., giving a capacity of 2,133 cc. The cylinders and pistons are of cast iron, for cheapness, and altogether financial considerations have not permitted many refinements which would be incorporated once the engine was really taken in hand and developed. Even at that, the

(Concluded at foot of next page.)



TWO VIEWS OF THE "METEOR" MARK I ENGINE: In the left-hand photograph the exhaust pipes are removed to show more clearly the arrangement of the engine. (FLIGHT Photos.)

The Industry



PERSONAL LUGGAGE: Flt.-Lt. W. E. P. Johnson is taking a Blackburn B.2. Trainer to Portugal as personal luggage! His "package" is here seen on one of F. Cook's Mercedes-Benz diesel lorries. It was brought from Brough by this means and loaded on board an ex-rum runner (now a Portuguese cargo-ship) as deck cargo, in the London Docks.

NEW B.A. WAREHOUSE

THE British Aluminium Co., Ltd., Adelaide House, King William Street, London, E.C.4, have removed their London Warehouse from 34-38, Banner Street, Golden Lane, London, E.C.1, to 23-25, Pancras Road, N.W.1. All communications for the London Warehouse should be addressed to their new premises. Telephone number 5301 (two lines).

NEW MEYROWITZ GOGGLES

E. B. MEYROWITZ, LTD., announce a new development in connection with their Luxor Goggles in the form of a hand-ground safety-glass lens. These lenses will be called the "white streak" lenses, because they are tinted at the upper and lower portions, leaving a clear streak in the line of vision, giving the wearer perfect protection from glare coming from above or below his line of vision. The price of the No. 6 Luxor Goggle with the lenses is £4 5s., and can be seen at either of Meyrowitz's branches, 1A, Old Bond Street and 199, Regent Street, or their agents.

This improvement overcomes one of the great troubles with goggles, as glare incapacitates one's vision more easily than anything else, and those who find it difficult to look near the sun should certainly invest in a pair of these new goggles.

IRVIN AIR CHUTE IN TURKEY

THE Turkish Air Force has accepted the Irvin Air Chute as its standard parachute equipment, and placed a large contract with the Irving Air Chute Co. for their standard types.

An expert of the Company has recently been in Turkey instructing the Turkish airmen in the maintenance and operation of parachutes.

Following the wise example set by our own Royal Air Force, no Turkish military airman is now allowed to fly without an Irvin parachute.

HERMES RELIABILITY

THE following letter from the Chief Instructor of the Royal Singapore Flying Club to the Cirrus-Hermes Engineering Co., Ltd., of Croydon Aerodrome, Surrey, England, speaks for itself and testifies to the excellence of the engines of that firm:—

"Dear Sirs,—At this Club we have now completed the change-over from Cirrus Mark III to Hermes Mark II engines in our 'Moth' seaplanes, and it seems an opportune time to tell you how satisfactory these Cirrus Mark III's have been. I have flown behind many different engines, but I have never had a more reliable type.

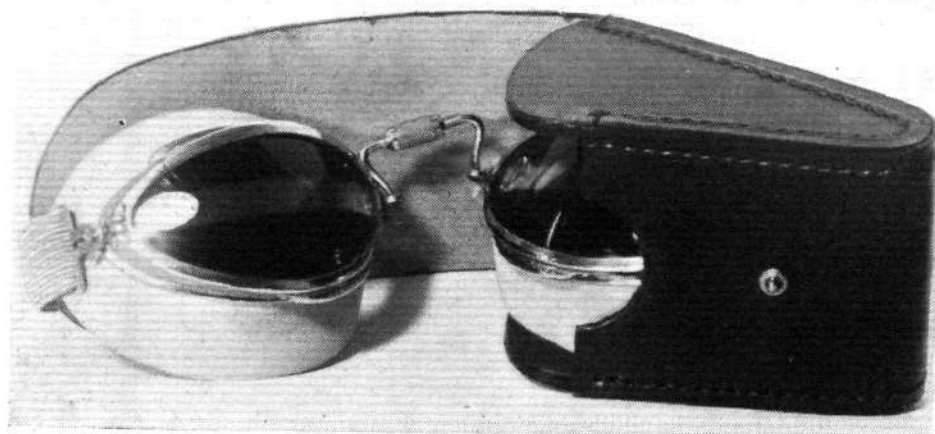
"Our engines are subjected to far greater strain than engines in land-planes, and they operate under worse conditions—yet our troubles have been few. One engine has exceeded 1,140 hours, and the others are around the 1,000 hours mark. Last year we did not have a single engine failure in over 1,300 hours' flying.

"We are very pleased with the Hermes so far. The take-off is much easier owing to the extra power available, and no trouble has been experienced. Wishing you continued success.—(Signed) S. H. Potter."

CASTROL AT FOLKESTONE

THE Comper "Swift" (Gipsy III) in which Mr. A. J. Styran won the Folkestone Aero Trophy at Lympne on August 25 was lubricated with Wakefield Castrol oil.

This oil was also used by Flt. Lt. N. Comper, who came second in a similar aeroplane with a Pobjoy engine.



TO OBVIATE GLARE: These new Meyrowitz goggles should be a boon to pilots who suffer when flying towards the sun. (Flight Photo.)

THE "METEOR" ENGINE

(Concluded from previous page.)

weight is only 210 lb. All tests have been made with the engine driving a "Gipsy III" propeller, from the tips of which some 3½ inches have been cut away. The engine will drive this propeller around at 2,000 r.p.m., when it is estimated that the propeller absorbs about 110 b.h.p. The designers estimate that by the use of aluminium alloys, cylinder steel sleeves, etc., the weight could be reduced to not much more than 150 lb., while they feel confident of getting nearly 150 b.h.p. out of the engine at a speed of

2,300 r.p.m. As the engine is particularly simple to manufacture (there are but three gear wheels in it, for example!) the production costs should be low, and the aero engine weighing a pound per h.p. and costing £1 per h.p. may not be as unattainable as it looks at present.

Roller bearings are used throughout, and oil is forced by pump to circumferential grooves in the cylinder walls. The crankcase bearings, etc., are at present lubricated by splash, but will later be converted for dry sump lubrication. The experimental engine has now run about 30 hr. under its own power, and about 100 hr. "motoring."

THE ROYAL AIR FORCE

London Gazette, August 26, 1932

General Duties Branch

The follg. Flight-Cadets, having successfully passed through the R.A.F. College, Cranwell, are granted permanent commns. as Pilot Officers with effect from and with seny. of July 23:—R. J. Berens, F. C. de la P. Beresford-Peirse, J. Bradley, C. Broughton, H. P. Burwood, R. A. C. Carter, A. N. Combe, R. E. de Penhenty O'Kelly, D. R. Evans, T. G. L. Gale, R. J. Gosnell, B. H. Gully, H. Y. Humphreys, D. J. P. Lee, H. G. Leonard-Williams, C. R. D. L. Lloyd, S. J. Marchbank, D. Michell, C. C. Morton, J. R. A. Peel, M. H. Rhys, T. U. Rolfe, R. H. Shaw, D. R. Shore, W. E. S. Tanner.

The follg. are granted short service commns. as Acting Pilot Officers with effect from and with seny. of Aug. 12:—H. G. L. Allsop, R. C. Beavan, R. M. Bradley, I. W. Braye, P. D. Carden, R. P. H. Carew, F. M. C. Corelli, H. S. Darley, C. F. S. Fraser, H. L. Fry, A. F. Hamilton, F. W. Hilton, P. H. Holmes, C. C. House, D. R. Keiller, E. B. King, H. J. F. Le Good, I. J. McGhie, H. S. Miles, B. R. Moeran, E. W. Owens Thurston, B. O. Prowse, J. G. Rhys-Jones, F. W. Richards, I. A. Scott, G. J. Spence, H. Stanton, N. W. Wakelin, A. T. H. Willis, J. W. Young, R. H. Young. The follg. Pilot Officers are promoted to rank of Flying Officer:—H. A. V. Hogan (June 20); E. R. Berry (July 29). F/O. D. W. Bayne takes rank and precedence as if his appointment as Flying Officer bore date Feb. 15, 1931, immediately following F/O. D. J. Douthwaite on the gradation list (reduction

takes effect from June 28). The follg. Flt.-Lts. are placed on retired list (Aug. 18):—A. Lees, G. Lansdowne, D.F.C. P/O. J. M. Wilson resigns his short service commn. (Aug. 24).

ROYAL AIR FORCE RESERVE RESERVE OF AIR FORCE OFFICERS

General Duties Branch

A. M. Glover is granted a commn. in Class A as Flying Officer (Aug. 9); G. M. T. Kerr is granted a commn. in Class AA (ii) as Pilot Officer (Aug. 8). The follg. Flying Officers are transferred from Class A to Class C:—C. R. Robbins, M.C., D.F.C. (Sept. 20, 1931); A. J. C. Overall (Aug. 19); H. E. Duncan (Aug. 21). F/O. E. Rea relinquishes his commn. on completion of service (Aug. 11); the commn. of Pilot Officer on probation P. J. Poncia is terminated on cessation of duty (Aug. 3).

SPECIAL RESERVE

General Duties Branch

F/O. W. Humble is transferred to the Reserve of Air Force Officers, Class A (May 16).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch.

Wing Commanders: G. B. Dacre, D.S.O., to Station H.Q., Kenley, 30.7.32, to command vice Wing Com. D. Stewart, M.C., A.F.C. C. O. F. Modin, D.S.C., to H.Q., Air Defence of G. Britain, Uxbridge, for Air Staff duties, vice Wing Com. A. H. Peck, D.S.O., M.C., 19.8.32. A. H. Peck, D.S.O., M.C., to Station H.Q., Northolt, to command vice Wing Com. K. R. Park, M.C., D.F.C., 20.8.32. H. M. Probyn, D.S.O., to No. 22 Group H.Q., S. Farnborough, for Air Staff duties, vice Wing Com. J. H. D'Albiac, D.S.O., 20.8.32.

Squadron Leaders: I. Collen, M.B.E., A.F.C., to H.M.S. *Furious*, 15.8.32, for Armament and Flying duties vice Sqdn. Ldr. J. A. W. Binnie. G. R. A. Deacon, M.C., to No. 26 Sqdn., Catterick, to command, vice Wing Com. P. B. Hunter, 22.8.32. C. S. Richardson, M.B.E., to School of Army Co-operation, Old Sarum, for Signals duties, vice Sqdn. Ldr. S. L. Quine, 22.8.32. J. A. W. Binnie, to Special Duty List, whilst employed on Armament duties Chemical Defence Experimental Station, Porton, 22.8.32.

Flight Lieutenants: F. W. Moxham, to Station H.Q., Northolt, 6.8.32. R. J. Carvell, to No. 3 Stores Depot, Milton, 28.7.32. C. E. H. Allen, D.F.C., to Home Aircraft Depot, Henlow, 22.8.32. W. V. Hyde, to Station H.Q., Hornchurch, 16.8.32. F. Wright, to No. 24 Sqdn., Northolt, 16.8.32. A. V. Hammond, to No. 3 Sqdn., Upavon, 16.8.32. W. Gill, to R.A.F. Reception Depot, West Drayton, 6.7.32.

Flying Officers: P. G. Thomison, to R.A.F. Base, Calshot, 4.8.32. J. A. Easton, to Air Armament School, Eastchurch, 6.8.32. G. P. Longfield, to Superintendent of R.A.F. Reserve, Hendon, 5.8.32. N. Stratton, to R.A.F. Depot, Uxbridge, 7.7.32. D. C. Harrison, to No. 26 Sqdn., Catterick, 15.8.32. E. J. Gracie, to No. 18 Sqdn., Upper Heyford, 23.8.32. L. A. Hutchings, to Station H.Q., Manston, 18.7.32.



HIGHER COMMANDS IN THE R.A.F.

On page 814 will be found the official announcement of changes in the Higher Commands of the R.A.F. Below we give brief details of the careers of the officers concerned:

AIR VICE-MARSHAL E. R. LUDLOW-HEWITT was appointed to the R.F.C. from the Royal Irish Rifles in August, 1914. He served in France from March, 1915, with intervals until the end of the war, receiving the C.M.G., D.S.O. and the M.C., also being mentioned in despatches.

Subsequently he was employed at the Air Ministry for several years, holding the posts of Deputy-Director of Training and Organisation, Air Secretary to the Secretary of State for Air, and President of the Aerodrome Board. He was Air Aide-de-Camp to His Majesty the King, 1921-23, and in June, 1923, was promoted to Air Comm. From May, 1926, to September, 1930, he was Commandant of the R.A.F. Staff College, and in the Birthday Honours List, June, 1928, was appointed a Companion of the Order of the Bath. He was promoted to AVM. in January, 1930, and in October, 1930, was appointed A.O.C. Iraq Command.

AIR VICE-MARSHAL C. S. BURNETT entered the Army as 2nd Lieut., Highland Light Infantry, in 1901, and after having taken part in two campaigns resigned his commission in August, 1909. He joined the R.F.C. at the outbreak of war.

During the War he commanded a squadron and wing in France and Palestine, and for these services was awarded the D.S.O. and C.B.E. in addition to four mentions in despatches.

Subsequently he commanded No. 31 Wing, R.A.F., Mesopotamia, and in 1923 was appointed Deputy Director of Operations and Intelligence, Air Ministry, until taking command of the C.F.S. in January, 1927. In the New Year Honours List of the same year he was made a C.B., and on promotion to the rank of Air Comm. in January, 1929, was appointed Chief Staff Officer, Iraq Command, and in January, 1931, he became Director of Operations and Intelligence, Air Ministry, and Deputy Chief of the Air Staff. He was promoted to the rank of AVM. in July, 1931.

Pilot Officers: I. W. Braye, P. G. Carden, R. P. H. Carew, F. M. C. Cornelli, H. S. Darley, H. L. Fry, A. F. Hamilton, P. H. Holmes, C. C. House, E. B. King, H. J. F. Le Good, I. J. McGhie, E. W. Owens Thurston, B. O. Prowse, J. G. Rhys-Jones, F. W. Richards, I. A. Scott, A. T. H. Willis, and J. W. Young, to R.A.F. Depot, Uxbridge, on appointment to short service commns. as Acting Pilot Officers on probation with effect from 12.8.32. H. F. Boss-Walker, G. E. Strangman, A. G. F. Stewart, D. A. Gibson, and J. W. B. Judge, to R.A.F. Depot, Uxbridge, on appointment to short service commns., with effect from 16.8.32. H. G. L. Allsop, R. C. Beavan, R. M. Bradley, C. F. S. Fraser, F. W. Hilton, D. R. Keiller, H. S. Miles, B. R. Morean, G. J. Spence, H. Stanton, N. W. Wakelin, and R. H. Young, to R.A.F. Depot, Uxbridge, on appointment to short service commns. as Acting Pilot Officers on probation, with effect from 12.8.32.

Stores Branch

Flight Lieutenant C. N. Scott, to H.Q., Coastal Area, Lee-on-the-Solent, 22.8.32.

Accountant Branch

Flight Lieutenant V. G. A. Bennett, Station H.Q., Northolt, 22.8.32.

NAVAL APPOINTMENTS

The following appointments have been made by the Admiralty:—

Lieut.-Commr. (Flying Officer, R.A.F.).—E. W. E. Lane, to *Victory*, for R.A.F. Gase, Gosport (Aug. 29).

Lieuts. (Flying Officers, R.A.F.).—S. Borrett, reattached to R.A.F., and appointed to *Victory* for R.A.F. Base, Gosport (Aug. 22), and for 443 Flight (Aug. 29). O. S. Stevinson, to *Royal Sovereign*, on appointment to general service (Sept. 14).

AIR COMMODORE C. D. BREESE entered the Royal Navy in 1909 as an Engineer Sub-Lieutenant, and joined the R.N.A.S. in July, 1914. During the war he served in France, where he was wounded in an aerial combat in May, 1917. He was awarded the A.F.C. in 1918.

He was appointed to a permanent commission in the R.A.F. in 1919, and took command of the C.F.S. at Upavon. He went to India in April, 1920, and was in command of the Aircraft Depot there until June, 1924, when he was transferred to the Home Establishment. After holding appointments at No. 1 School of Technical Training, Halton, and at the R.A.F. Base, Gosport, he was posted in April, 1930, to Iraq for duty on the Headquarters Staff. He was promoted to the rank of Air Comm. in July, 1932.

Royal Air Force Memorial Fund

A MEETING of the Grants Committee was held on August 25. Mr. W. S. Field was in the chair, and the other members of the Committee present were:—Air Com. B. C. H. Drew, C.M.G., Mrs. F. Vesey Holt, Sqd. Ldr. H. G. W. Lock, D.F.C., A.F.C. The Committee considered in all eight cases, and made grants to the amount of £159 3s. The next meeting was fixed for September 8 at 2.45 p.m.

R.A.F. Cadet College, Cranwell

THE following flight cadets successfully completed on July 22, 1932, their course of training at the Royal Air Force College. The names are arranged in alphabetical order:—

Berens, R. J.; Beresford-Peirse, F. C.; Bradley, J.; Broughton, C.; Burwood, H. P.; Carter, R. A. C. (winner of Air Ministry Prize for Aeronautical Engineering); Combe, A. N. (winner of Sword of Honour and J. A. Chance Memorial Prize); de Penhenty O'Kelly, R. E.; Evans, D. R. (winner of Air Ministry Prize for Humanistic Subjects); Gale, F. G. L.; Gosnell, R. J.; Gully, B. H.; Humphreys, H. Y.; Lee, D. J. P.; Leonard-Williams, H. G.; Lloyd, C. R. D. L.; Marchbank, S. J.; Michell, D.; Middleton, L. M.; Morton, C. C.; Peel, J. R. A.; Rhys, M. H. (winner of Abdy Gerrard Fellowes Memorial Prize and R. M. Groves Memorial Prize); Rolfe, T. U.; Shaw, R. H.; Shore, D. R.; Tanner, W. E. S.

AIR POST STAMPS

By DOUGLAS ARMSTRONG

SPECTACULAR advances in the values of official air post stamps are likely to be a feature of the new priced catalogues due for publication by the leading firms of stamp dealers on or about September 1. In view of recent auction-room realisations, quotations for some of the major rarities are hopelessly out of date; in fact, the ever-increasing popularity of this branch of collecting indicates an all-round readjustment of values throughout the air stamp group. Certain it is that few, if any, of these much-needed alterations will be in other than an upward direction.

A Novel Scheme

An air post stamp of an unusual character is foreshadowed in connection with a world tour by seaplane planned by a concern known as Aerial World Tours, Incorporated, starting from Minneapolis, U.S.A., and touching at Toronto, Montreal and Holyrood (Newfoundland), *en route* for Europe and Asia by way of Iceland, Greenland and Norway. According to local (Newfoundland) newspaper reports, the company in question has obtained the sanction of the Newfoundland Government for the provision of 400,000 stamps of special design to be sold at \$1 each wherever the seaplane "Newfoundland" touches on her tour. Presumably the mail collected *en voyage* will be brought back to Newfoundland and thence forwarded to the addresses under frank of the particular postage stamp. The stamp itself is to be engraved and printed in America under the supervision of the North-Western National Bank of Minneapolis, the dies and plates being destroyed immediately the authorised number has been printed off. For this concession the Newfoundland Government is said to have been guaranteed a net sum of \$80,000.

After the scandal of the Do.-X air mail stamp collectors will be inclined to look askance at this latest air stamp stunt, which on the face of it redounds little to the credit of a British Dominion.

En passant, it may be noted that the Do.-X overprint on the \$1 air mail stamp of Newfoundland has turned up *inverted*. This is not altogether surprising when it is remembered that the provisional was printed in great haste in blocks of four and that at a hurried glance the original map stamp appears very much the same, whichever way you look at it. Four blocks showing the misprint have been recorded so far as having changed hands at high prices. Two of them have gone into well-known collections in the United States and one other has found its way to England.

New S.A.

Two South American States whose air post stamps have hitherto enjoyed but semi-official status have now put forth regular issues of air mail stamps for use in the services operated under government auspices, albeit still by private contractors. Bolivia and Colombia are the countries in question.

From Bolivia comes a set of seven official air mail stamps in substitution for those previously provided by the operating concern (Lloyd Aereo Boliviano), lithographed at La Paz in traverse rectangular format and showing an ancient Aztec device symbolical of flight, with the words "Correo Aereo" superimposed thereon and comprising 5 cts. ultramarine, 10 c. grey, 15 c. red, 25 c. yellow, 30 c. green, 50 c. violet and L. Boliviano brown.

The latest Colombian air stamp issue which supersedes that of the Scadta Company consists of thirteen postage and one registration stamp, ranging in value from 5 centavos to 5 pesos, offset printed by the German National Printing Office at Berlin in a series of picturesque designs by Fraulein Dorothea Suffrian, representing characteristic products and industries of the country, such as Coffee, Bananas, Cattle, Petroleum, Gold and Emeralds. Uniformly inscribed "Sobreporte Aereo," they were first taken into use on August 1, 1932.

Venezuela also introduced, on or about July 1, a long series of four and twenty new air mail stamps, from 5 centimos to 20 Bolivars, similar in design to the locally printed issue of 1930, but finely engraved in London and printed upon paper covered with a protective pattern, after the manner of bank cheques.

Alterations in the air mail tariff in Nicaragua have led to the surcharging of the existing 50 c. and 1 Cordoba stamps with the new denominations 30 c., 35 c., 40 c. and 55 c. pending preparation of those values in the definitive

type for use over the Managua-Brownsville air line operated by Pan-American Airways, Inc.

Russian Polar Flight Stamps

For use upon a special air mail to be despatched from Franz Josefland to Archangel via Nova Zembla by the second Polar Expedition organised by the Soviet authorities this year, two special stamps have been provided, viz., 50 kopecs red, representing the fee for postcards, and 1 Ruble green for letters in a design consisting of a map of the Polar regions in the light of the latest scientific discoveries, flanked upon the left-hand side by a panel depicting an aeroplane passing over the ice-breaking steamer "Sibiriakoff" and on the right by the Soviet emblem of the Hammer and Sickle. Beneath the vignette runs the inscription, in French, "2me Annee Polaire Internationale 1932-33." The flight was to have taken place during August, but no flown covers have been seen up to the time of writing these notes.

British Triumphs at Danzig

As was expected, British exhibitors carried off most of the big awards at the International Air Post Exhibition (Luposta), held in Danzig at the end of July. The highest award, a gold medal and the special "Zander" trophy, fell to Miss W. Penn Gaskell's marvellous collection of "flown covers," whilst two gold medals, one of which was presented by the Free State of Danzig, went to Mr. P. H. Oakley. Dr. J. Pringle's small, but choice, display of Newfoundland rarities secured a well-deserved silver gilt medal, together with another special award, and silver medals were conferred upon the Dowager Viscountess Downe, Messrs. B. T. Ackroyd, J. MacHarg, Jr., T. E. Field and Miss Littleworth. Miss G. Collins received a bronze medal and Mr. E. R. King a diploma. There is talk of a London International Air Post Exhibition to take place some time before 1935.



Graf Zeppelin Off Again

THE airship *Graf Zeppelin* resumed her journeys from Europe to South America on Monday, August 29. She left Friedrichshafen on Lake Constance for South America early in the morning, passing over Lyons at 10.5 a.m., then following the Rhône to Marseilles, and out to sea. She passed over Tenerife at 10.45 a.m., August 30.

The following schedule of voyages of the airship *Graf Zeppelin* has been published:—

Leave Friedrichshafen.	Arrive Pernambuco.	Leave Pernambuco.	Arrive Friedrichshafen.
Aug. 29	Sept. 1	Sept. 3	Sept. 7
Sept. 12	Sept. 15	Sept. 17	Sept. 21
Sept. 26	Sept. 29	Oct. 1	Oct. 5
Oct. 10	Oct. 13	Oct. 17	Oct. 21
Oct. 24	Oct. 27	Oct. 29	Dec. 2

The flight starting on September 12 will probably be extended to Rio de Janeiro, and that starting on October 10 to Rio and Buenos Aires.

M. Etienne Michelin Killed

A FLYING accident near Puy-de-Dôme, the mountain near Clermont-Ferrand, cost the life of M. Etienne Michelin, the 33-year-old son of M. Michelin, the well-known tyre manufacturer, on Saturday evening, August 27.

"Clouds" Ordered

THE BRITISH AIR MINISTRY has just placed with Saunders-Roe, Ltd., of Cowes, Isle of Wight, an order for five "Cloud" amphibian aircraft. The machines, which will be equipped each with two Armstrong-Siddeley "Double MongOOSE" engines, will be of the amphibian type, with Palmer wheels and brakes. The "Clouds" are being laid out specially for flying and navigational instruction, and it would appear likely that they will be stationed at Calshot.



AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motors.
(The numbers in brackets are those under which the Specification will be printed and abridged, etc.)

APPLIED FOR IN 1931

Published September 1, 1932

- 13,246. D. F. ANDERSON. Apparatus for dropping articles from aircraft. (378,043.)
20,085. W. E. P. JOHNSON. Apparatus for use in flying training. (378,172.)
21,062. E. DODSON. Ignition control for aircraft engines. (378,182.)
21,768. R. W. SCHROEDER. Aeroplane propellers. (378,196.)
22,180. ECLIPSE AVIATION CORPN. Starting devices for i.c. engines. (378,200.)
26,672. PIONEER INSTRUMENT CO., INC. Engine synchronism indicators. (378,242.)
29,791. V. KUTNAR. Flying machines. (378,267.)